



NEW BRITISH COLUMBIA



OFFICIAL BULLETIN № 22

PUBLISHED BY AUTHORITY OF THE
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BUREAU OF PROVINCIAL INFORMATION

NEW BRITISH COLUMBIA

THE UNDEVELOPED AREAS OF THE

GREAT CENTRAL

— AND —

NORTHERN INTERIOR

BULLETIN No. 22

(Ninth Edition)



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1908

Captain the Honourable R. G. Tatlow,
Minister of Finance and Agriculture,
Victoria, B. C.

Sir,—The publication of a new edition of Bulletin No. 22 is made necessary through the ever-increasing demand for information regarding the great undeveloped areas of the Province.

I have therefore the honour to submit for your approval the following pages, bearing upon the existing conditions and prospective future of New British Columbia, compiled from the latest available data.

I have the honour to be,

Sir,

Your obedient Servant,

R. M. PALMER,

Secretary Bureau of Provincial Information.

Victoria, B. C.,

May, 1908.

NEW BRITISH COLUMBIA

NEW BRITISH COLUMBIA, which includes the great undeveloped valleys and plateaux of the Coast, Cassiar, Cariboo and Lillooet Districts, is attracting so much attention as a desirable country for home-seekers that it is found necessary to publish a revised edition of Bulletin No. 22, containing the latest available information regarding the present conditions and future possibilities of this vast and, to a great extent, unknown region. The great hindrance to the rapid settlement and development of this portion of British Columbia, is the almost total lack of transportation facilities, there being practically no waggon roads at present and but few pack trails. The principal gateway to the country—the Skeena River—is only navigable at certain stages of water, and the steamboat accommodation is limited to three vessels, which ply between Port Essington and Hazelton during the season of navigation.

In former editions of this Bulletin people were warned against rashly casting their lot in a region about which so little is known, where travelling is difficult and means of communication lacking, and that advice still holds good. From all reports there are large areas of fertile land, well suited to mixed farming, dairying and cattle-raising, but most of this land is far from the markets, hard to get at and so isolated that, until the coming of the railway, those who make homes in that country must be prepared to "rough it" and bear with all the inconveniences and privations incidental to pioneer life. On the other hand, men accustomed to frontier life, and possessed of sufficient means to establish themselves in advance of the railway, need have no hesitation about going into a country where every man able and willing to work is certain of a present livelihood and a competency in the future.

PRINCE RUPERT

THE Grand Trunk Pacific Railway Company has let contracts for the construction of the first 200 miles of the Pacific Division, eastward from Kaien Island (Prince Rupert), and work is now progressing in the Skeena River valley. The Company has announced its intention of establishing its Pacific Coast terminus at Prince Rupert, and the work of clearing the townsite of timber is proceeding. Under its contract with the Government of British Columbia, which owns a one-quarter interest in the townsite, the Company agrees to complete the survey and subdivision of Prince Rupert not later than September 30th, 1908. Until this survey and subdivision has been made and is approved by the Government no lots will be sold. Other townsites, advertised as "Prince Rupert" and "East Prince Rupert," are situated at a distance from the G. T. P. townsite of Prince Rupert, and should not be confounded with it. To protect the public against imposition, the Government has issued the following notice:—

"The attention of the Lands and Works Department having been directed to the fact that town lots in a townsite named Prince Rupert, being a subdivision of Lot 642, Range 5, Coast District, situated on the mainland between the mouth of the Skeena River and Kaien Island, are being offered for sale, it has been deemed necessary to warn the public that the said townsite is not situated at the terminus of the Grand Trunk Pacific Railway, and is not the townsite which is owned jointly by the Government of British Columbia and the Grand Trunk Pacific Railway Company.

"F. J. FULTON,

"Chief Commissioner of Lands and Works.

"Lands and Works Department,

"Victoria, B. C., May 1st, 1908."

The conditions existing at Prince Rupert are fully explained in the following extracts from *The Empire*, of April 11th, 1908. *The Empire* is a weekly newspaper printed and published at Prince Rupert:—

CLIMATE

"The climate at Prince Rupert is much the same as it is at points on the sea coast of the mainland between San Francisco and Vancouver. There is a good deal of rain, very little snow, and a temperature ranging from 10 to 70 degrees above zero.

SOIL

"At Prince Rupert the soil is a vegetable mould covered with moss and intermixed with roots, and from one to ten feet deep to bed-rock. It is spongy and water-soaked and does not drain easily, although the land lies well for drainage. At present animals can not be used for traffic or for any kind of work.

VEGETATION

"The vegetation at Prince Rupert is almost wholly evergreen, the timber being red and yellow cedar, spruce, hemlock, and bull pine. The undergrowth is principally blueberry bushes.

HARBOUR

"The harbour is one of the finest on the Pacific Coast. It is large, land-locked, good depth of water, no shoals, and no obstructions. It has three outlets, so that currents are not strong when tides ebb and flow. Tides range from 1.6 at low tide to 26.8 at extreme high tide; the average varies from 12 feet to 13 feet twice every 24 hours. The entrance is well lighted and buoyed, and sailing vessels will not need to be towed more than a mile beyond the entrance.

WATER

"The present water supply is taken from a branch of Hays Creek, the place of diversion being about 600 feet above sea level. There is an ample supply for 2,000 to 4,000 people. Future supply will come from Shawatlans Lake, which is said to be large enough to supply 100,000 people. The source of

the water is rain and snow, the watershed being mountains ranging from 2,000 feet to 4,000 feet high.

TOWNSITE

"The townsite of Prince Rupert is on the west side of Kaien Island, and when surveyed will have a frontage of four miles on the harbour and must contain at least 2,000 acres, 1,300 of which are now cleared. When surveyed, every fourth block and the lots therein will be owned by the Province of British Columbia; the remainder will be owned by the Grand Trunk Pacific Town & Development Company, Limited.

SIZE OF LOTS

"The townsite has not been surveyed into blocks and lots; but under the agreement between the Province and the Grand Trunk Pacific Railway Company, the survey and subdivision into lots is to be completed on or before September 30th, 1908. Surveying will be commenced on or about May 1st.

PRICE OF LOTS

"As there are no lots, there can be no prices; and no person at Prince Rupert can give information respecting either the prices at which lots will be offered or terms of payment.

DATE OF SALE OF LOTS

"All the information available respecting the date on which lots will be offered for sale is, that the townsite is to be surveyed and subdivided into lots on or before September 30th, 1908. Sale of lots cannot well take place before that date.

LOCATIONS FOR BUSINESS

"The land that will be within the boundaries of the townsite is locally known as 'Knoxville,' 'Baconville,' and 'Vickersville.' The houses in 'Knoxville' are on the Grand Turk Fraction and Cariboo Mineral Claims. The land is not cleared and permissions to erect cabins are no longer granted. It is not suitable for business locations under present conditions. 'Baconville' is at the G. T. P. wharf and on a street leading from the wharf. Permission to live

and do business there is obtained only from Frank W. Morse, of Montreal, General Manager of the G. T. P. R. It is understood, permissions are not now being granted. 'Vickersville' is on cleared land, distant about 3,000 feet north-east of the wharf. Permissions to erect tent houses there are granted by James H. Bacon, G. T. P. Harbour Engineer, but all permissions have to be approved by W. H. Vickers, Chief Constable of Skeena District, who is stationed at Prince Rupert. 'Vickersville,' like 'Knoxville,' is not suitable for business locations under present conditions.

(Since the above was written, permission to squat at 'Vickersville' has been withdrawn).

BUSINESSES THAT WOULD PAY

"Under present conditions, and present conditions are likely to continue until lots in the townsite are sold, there is no chance to engage in any kind of business at Prince Rupert.

CHANCES FOR GETTING EMPLOYMENT

"There will be very little work at Prince Rupert for skilled mechanics of any kind until lots in the townsite are sold; and until business buildings are erected there can be no employment for clerks, bookkeepers, stenographers, and the general run of office help. The same will hold good respecting help for hotels and restaurants. Once grading is commenced on the G. T. P. at Prince Rupert, there will be work for men who know how to use a pick and shovel, an axe, and a hammer and drill. The right-of-way of the first 100 miles east from Prince Rupert is to be cleared, and much of the grading will be rock-work.

POPULATION

"Prince Rupert has about 300 people, and there cannot well be an increase until lots are sold.

CHURCHES

"The Church of England and the Presbyterian Church hold services; the one in a church hall and the other in a

building erected by the G. T. P. for a hotel, but which has not been opened.

SCHOOLS

"A building for a public school has been provided for, and a school was started on April 6th, with an attendance of eight children.

SEWERS AND LIGHT

"The G. T. P. has laid a main sewer on the street leading from the wharf for a distance of 700 feet; and a number of buildings are connected with it. The B. C. Tie & Timber Company, whose saw-mill is two miles from the G. T. P. wharf, supplies the town with electric light at \$1 a month for each 16 c.p. lamp.

FARE FROM VANCOUVER

"Prince Rupert is reached from Vancouver, Victoria, and Seattle by steamship, running direct from these three ports, that make the run in from two to three days. The fare from Vancouver and Victoria is \$18, and from Seattle \$20.

RAILWAY CONSTRUCTION

"A contract for grading 100 miles of the G. T. P., east from Prince Rupert, has been let to Foley, Welch & Stewart, and work was commenced at Prince Rupert on April 6th.

WAGES

Skilled mechanics are paid from \$3.50 to \$5 a day of ten hours. Labourers have been paid \$45 a month and board by the G. T. P., and from 25 cents to 30 cents an hour by other employers. Axemen engaged at clearing the townsite were paid from 35 cents to 37½ cents an hour. It is said that sub-contractors under Foley, Welch & Stewart are not tied down to pay any fixed price for labour; but it may be said that the wages will run from 20 cents to 30 cents an hour, according to the worth of the worker.

HOTELS AND RESTAURANTS

"In 'Knoxville' there are two small hotels, at which meals and beds can be obtained, and two restaurants. The price of single meals is 35 and 50 cents. The price of beds is 50 cents to \$1. Board by the week is \$6 and \$7. There are no lodging or furnished-room houses. The G. T. P. has two good hotel buildings completed, but they are not furnished and no person here seems to know when they will be furnished and opened. Liquor is not sold in the town, and liquor licences have not as yet been granted to anyone.

BUSINESS HOUSES

"In 'Baconville,' the G. T. P. has given permission to the following named to carry on business: L. Morrow & Co., dealers in meats; Harrison, Campbell & Mills, drug store; Canadian Bank of Commerce; J. G. Moody, barber shop; Prince Rupert Hardware Supply Company, hardware and stoves; Kelly-Carruthers Supply Company, general merchandise; C. B. Schreiber & Co., men's clothing, etc.; A. Wark, jeweller; a Chinese laundry; the Caledonia Trading Company, dealers in coal; and L. Crippen & Co., customs brokers. In addition to the above named, there is a laundry and shoemaker, besides two hotels and two restaurants, doing business in 'Knoxville' without getting permission from the G. T. P. The Empire Printing Company, Limited, and the Northern Trust Company are doing business in "Knoxville."

HEALTH

"The first G. T. P. party of engineers began work at Prince Rupert in May, 1906, and since then there has been as high as 500 people living on Kaien Island, and there has been little sickness and no deaths.

GOVERNMENT OFFICES

"There is a postoffice, a customs house, a Dominion Government telegraph office, and the office of the Chief Constable of Skeena District, who is also a Deputy Mining

Recorder. The office of the Government Agent, now at Port Simpson, will be moved to Prince Rupert by June 1st.

GENERAL ADVICE

"Do not come to Prince Rupert, except as sightseers or under engagement to go to work, until lots in the townsite are sold. The writer is not in a position to give information respecting the nearness to Prince Rupert of land that is suitable for farming or how it can be obtained; or accurate information respecting building material, like sand, clay, and stone. There are five saw-mills within 40 miles of Prince Rupert, and rough lumber sells for \$17 alongside the wharf at Prince Rupert, and costs from \$3 to \$5 a thousand to take it from the wharf to where it can be used."

RAILWAYS

Foley, Welch & Stewart, contractors for the first 100 miles of the main line of the Grand Trunk Pacific Railway, running eastward from Prince Rupert, are now getting their men and plant on the ground and will begin work very soon. These contractors are also building a railway from the head of Kitimat Inlet to the mouth of the Copper River. They expect to employ between 5,000 and 6,000 men during the summer. Men seeking work on the railway should apply to the contractors, who have an office in Vancouver. It is not advisable to go to Prince Rupert in the expectation of getting work.

The Canadian Northern, which is now completed from Lake Superior to Edmonton, Alberta, is not bound by contract to complete its line to the Pacific within a specified time, but it is generally understood that the Company is anxious to secure an outlet on the Pacific, and that it will build through British Columbia as soon as possible.

The Pacific Northern and Omineca Railway Company, which has a charter to build from Kitimat Arm northward to Hazelton, on the Skeena River, is bound by its agreement with the Government to complete the road by May, 1910, and work is now being proceeded with on the first section, from Kitimat to the mouth of the Copper River.

GENERAL DESCRIPTION

The Central and Northern Interior of British Columbia may be defined as lying between parallels 52 degrees and 60 degrees north latitude, bounded on the east by the boundary of the Province and on the west by the Coast range of mountains. The land suitable for settlement may be divided into three well-defined areas: (a) that part of the Province lying to the east of the Rocky Mountains, commencing about latitude 54 degrees N. and running to the northern boundary; (b) that section of the great inter-montane valley between the Selkirk and Rocky Mountains, lying north of the Big Bend of the Columbia River, and (c) the numerous valleys between the Selkirk and Coast ranges of mountains to the north of the cross ranges of mountains that form the northern confine of the interior plateau.

EAST OF THE ROCKY MOUNTAINS

Very little is known of this enormous wedge-shaped area, and what information is available concerns only the southern half. The drainage area of the Black and Nation Rivers; that combining form the Liard, near the northern boundary of the Province, is a terra incognita. All present knowledge is confined to the valley of the Peace River and its tributaries, the Parsnip, Finlay and South Pine. Of the North Pine River, joining the Peace from the north near the 120th meridian, nothing whatever is known.

THE INTER-MONTANE VALLEY

This forms one of the most important topographical features of the Province. It crosses the International Boundary from the south and runs parallel with the western base of the Rocky Mountains, separating that range from the Selkirks, for a distance of over 800 miles. Apparently of very ancient origin, it is entirely independent of present drainage systems and varies in width from two to fifteen miles. Except for a short distance on the west bank of the Parsnip River, it is enclosed by mountains running in height from 3,000 to 6,000 feet, or more, above the valley. That portion within the purview of this bulletin includes the

drainage areas of the Canoe, Upper Fraser, Bad, Parsnip and Finlay Rivers.

THE WESTERN VALLEYS

These include the valley of the Homaltheo River, the country between Chileo River and Tatla Lake, the Chilcotin District, the Nechaco and Blackwater Valleys, the country along the east of the Bella Coola River, the fertile country in the vicinity of Ootsa Lake, and the Bulkley and Kispyox valleys.

CHARACTER OF COUNTRY

Much of the land included is suitable for agriculture, but, in a general way, agricultural operations will be confined to grazing, dairying and stock-raising, although wheat and other cereals can be grown in many localities. Feed is present in profusion, the native fodder plants being peavine, vetch, red-top, wild timothy, rye and blue grass. These cattle foods are luxuriant, rich and nutritious, and many reports state the peavine reaches waist high when travelling through it on horseback. In most localities cattle require to be fed for a few weeks in winter, but abundant hay can be cut for this purpose. Timber sufficient for local requirements is found everywhere.

MINERAL PROSPECTS

Though very little actual mining has been done in the region under consideration, enough prospecting has been engaged in to show that it is a promising field for exploration. In a small bulletin of this character only brief outlines can be given, but further information as to mining can be obtained from Mining Recorders and the Provincial Bureau of Mines. The several surveying and exploring parties that have traversed the northern interior all agree that there are indications of valuable mineral deposits in numerous localities.

As a general rule game is abundant and the rivers and lakes swarm with fish. Within a few years some sections will have railroad communication and intelligent prospectors have a chance of reaping eventually a rich reward for one or two seasons spent in investigation.

Respecting the mineral resources of the country explored by him, Mr. Poudrier, D.L.S., says:—

"Gold has been found formerly, and is yet found, on Lorne Creek, on the Skeena. Colours have been found on the Skeena proper, in the Zimoetz, the Kitsegue-cla, the Kit-sum-galum, in several small streams falling into the Naas. Small pieces of platinum are found in the Kitsegue-cla, with the gold. Gold-bearing quartz was brought from the Upper Skeena and from the Upper Naas. Copper was found on the Kemanon River, and on the Pund-il-delay, on the Skeena, on the Tsi-ax, and on the upper branch of the Naas. Galena-bearing silver was found on the Tsi-ax, and more abundantly in a small creek coming into the Naas a short way below. On the Skeena below Lakelse, some good ore of the same kind was also located. Lignite, in place, was seen in abundance on the Skeena and branch of the Naas, and on many creeks falling into the Skeena. On the Kitsgue-cla some coal, of an apparently good quality, was located. It has not yet been analyzed. Iron nodules are lying in abundance on the Kitsegue-cla, on the Skeena, and on the Naas. Hematite, of good quality, is plentiful on the Kemanon, the Kitiitat, the Extall, the Skeena, and the Naas. Volcanic tuff of different species, some of them appearing valuable, are abundant on the Naas. A kind of pitch, resembling bitumen, is also found at the same locality. Infusorial earth was seen near Hazelton. Good mica was found on the Upper Skeena and on the Naas. Slate, some of it very good, is abundant on the Tsi-ax and the Naas. Specimens of very rich cinnabar, coming from Kitimat, were seen, and some of the same ore was seen on the Kemanon."

Mr. William Fleet Robertson, Provincial Mineralogist, who made a trip through the country lying between the Fraser River and the Skeena, during the summer of 1905, says in his summary of "mineral probabilities":—

"Speaking generally and from a geological standpoint, it is considered that the Coast range and its eastern foothills is the only portion of the district which offers any very hopeful field for lode-mine prospecting, but this section is well worth such investigation. The headwaters of the Telqua is

about the eastern boundary of the area probably influenced by the Coast range. Here it will doubtless be found that the deposits will be smaller, though probably higher grade than nearer the main range. Until adequate transportation facilities are provided, even the best of the claims seen are of little value, as none of the ores are free milling, nor are they of a grade sufficiently high to stand pack-train transportation to Hazelton."

FINLAY RIVER GOLD

Considerable excitement having been created by the reported discovery of coarse gold on the Ingenika River, a tributary of the Finlay, and on McConnell Creek, a branch of the Ingenika, the latest report of the Gold Commissioner for the Omineca District should be of interest to prospectors. The Commissioner, writing from Hazelton on May 8th, 1908, says that 68 claims had been recorded and that the whole of McConnell Creek had been staked from its source to its confluence with the Ingenika, about 8 miles. Very little prospecting had been done on the creek up to April 21st, though the original locators, Jensen brothers, had a shaft down 32 feet with no sign of bedrock. Good prospects had been found on the creek, near its mouth, but nothing apparently to warrant the stories which have been told as to the wonderful richness of the new diggings.

The Gold Commissioner thinks that there is a chance of the camp proving to be a paying one, but so far none of the claims have been proved. It is fortunate, however, that the stampeders are practical miners and prospectors, so the district will be prospected this summer in a way it has never been before. The supply of provisions in the new camp is short, what supply there is having been brought in over the snow, and being limited both as to quality and variety, flour selling at \$75 per sack. The Gold Commissioner states that it will be July before the pack trains can get in, so the new camp is no place for tenderfeet.

The distance from Hazelton to Fort Grahame, on the Finlay River, is 273 miles by pack train.

From Edmonton to Fort Grahame is 788 miles. Another

route to Finlay River is:—By Ashcroft and Quesnel—From Quesnel up the Fraser River to Giscome Portage by boat, portage 4 to 6 miles to head of Crooked River, then down stream to Lake McLeod. (Crooked River is navigable by canoes only and only at high water. A steamer runs from Soda Creek to Fort George when the river is high.) McLeod Lake by Pack and Parsnip Rivers to the mouth of the Finlay and up the Finlay, an easy stream, to Fort Grahame.

VARIOUS ROUTES

Until the advent of railway communication and the construction of roads, this is a matter requiring special consideration. To those going in from the east, a start from the coast is generally recommended. Railway rates to Vancouver or Victoria are practically the same as those to Ashcroft, and the existence of the water route to Hazelton renders travelling more expeditious. While steamers do not run on the Skeena all the year round, their operations continue throughout the season when the further journey into the interior is most easy. But there are also advantages in favour of the Ashcroft-Quesnel route that should not be overlooked. Stock can be obtained cheaply on the road and driven in at much less expense than they can be carried by boat. By this way it would take from 60 to 90 days to drive in stock.

Kispyox and other grassy valleys lying north of Hazelton can only be reached by way of the Skeena. Approximately, the distances are:—

Vancouver or Victoria to Port Essington (steamer)	585 miles
Port Essington to Hazelton	150 "
Hazelton to Kispyox Valley (trail).	35 "
	770 "

Bulkley Valley can also be best reached this way, or by Bella Coola. The distances are:—

Coast Route

Vancouver or Victoria to Hazelton (steamer).....	735 miles.
Hazelton to mouth of Telkwa River (trail).....	60 "
	795 miles.

Bella Coola Route

Vancouver or Victoria to Bella Coola (steamer)	415 miles.
Bella Coola to Cheslatta Lake (trail)	135 "
Cheslatta Lake to mouth of Telkwa (trail)	125 "
	—
	675 "

The Ootsa Lake District, of which Cheslatta Lake is about a central point, is best reached via Bella Coola (see previous route).

Ashcroft Route

Probably the most direct route to the Nechaco and Blackwater Valleys is from Ashcroft, the distances being:—

Ashcroft to Quesnel (stage)	220 miles
Quesnel to Blackwater (trail)	40 "
Blackwater to Tsinkut Lake, Nechaco (trail)	55 "
	—
	315 "

A steamer is now running on the Fraser River between Soda Creek and Fort George, about 70 miles.

There is also a trail leading from Tsinkut Lake to the junction of the Bulkley and Telkwa Rivers, a distance of 145 miles.

Other Distances

Bella Coola to Quesnel (via Palmer Trail)	235 miles
" " (via Blackwater)	225 "

PEACE RIVER ROUTES

The Peace River District is the most remote covered by this Bulletin, and may be approached by several routes. The most direct is probably the all-water one from Quesnel, as a canoe can travel the whole distance to Fort St. John, except for the Giscome and Peace River Canyon portages.

As many extensive waterways are existent, it appears right to revise the tables of distances appearing in previous issues of this Bulletin. The routes now given much reduce the distance to be travelled by trail.

Route No. 1

The Hudson's Bay Company has taken full advantage of water carriage, and their present route is probably the best for those entering the country from the Coast. From

Hazelton (the head of steamboat navigation) that route is as follows:—

Hazelton to Babine Lake, by trail.....	65 miles.
Down Babine and Stuart Lakes to Fort St. James, by canoe	150 "
St. James to McLeod, by waggon road.....	90 "
McLeod to mouth of Parsnip, by canoe.....	120 "
Mouth of Parsnip to Canyon, by canoe.....	70 "
Over Canyon Portage, by trail	15 "
Canyon to St. John, by canoe.....	70 "
	<hr/>
	580 "

This totals 170 miles by trail and waggon road and 410 miles by water. A variation of the route can be made by following the Telegraph Trail from Hazelton to Fort Fraser and thence via Fort St. James as above. This passes through the Bulkley country and affords an opportunity for observing that and other agricultural areas found en route.

Route No. 2

The all-water route mentioned above is the one generally followed by miners wishing to enter the drainage area of the Peace, and has been described by Dr. A. R. C. Selwyn (1875-6) and Prof. R. G. McConnell (1894), of the Geological Survey.

Scaled from the map, the following are approximate distances:—

Ashcroft to Quesnel, by stage.....	220 miles
Quesnel up Fraser River to Giscome Portage, by canoe.....	113 "
Giscome Portage, by road.....	7½ "
Summit Lake via Crooked River to McLeod, by canoe.....	70 "
McLeod to mouth of Parsnip, by canoe.....	89 "
Mouth of Parsnip to Canyon, by canoe.....	75 "
Over Canyon Portage, by trail.....	11½ "
Canyon to St. John, by canoe.....	38 "
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	694 miles.

By this route the only travel by trail is the two portages, aggregating 22 1-2 miles. Prof. McConnell made the trip from Quesnel to St. John in 16 days, including stops for exploration.

Route No. 3

As some visiting the Peace River country may wish to inspect the country between Stuart and McLeod Lakes, the following gives approximate distances:—

Ashcroft to Quesnel, by stage	120 miles.
Quesnel to Fort St. James, by trail	125 "
St. James to Fort McLeod, by waggon road	90 "
McLeod to mouth of Parsnip, by canoe	89 "
Mouth of Parsnip to Peace River Canyon, by canoe	75 "
Canyon Portage, by trail	11½ "
Canyon to St. John, by canoe.....	38 "

Route No. 4

Still another route to St. John is found by following the last-mentioned route to McLeod and then taking a trail along the Misinchinca River, over the Pine River Pass and then along South Pine River to the headwaters of Moberly River, following that river to the lake of the same name and thence to Old Hudson's Hope, on the south bank of the Peace. Very little, however, is known of this trail and, outside prospecting for minerals, it is probably of very little use. As stated before, in 1901 Mr. F. W. Valleau reported:—"While here (Fort St. John) I learned that there were 12 or 15 men hunting and prospecting on the South Pine River, about 200 miles from St. John, and also that they had reported finding some very rich copper ore. These men came into the Province by way of Edmonton."

TETE JAUNE CACHE ROUTES

With regard to Tete Jaune Cache, the following tables of distances are taken from the Report of the Minister of Mines for 1901:—

Kamloops Route

(Distances from Kamloops, and chief characteristics.)

Spratt's Ranch.....	19 miles,	waggon road,	open country.
Louis Creek	35 "	"	P. O. and store.
Pearl Lake	45 "	"	bridge.
Indian Reserve	48 "	"	village.
Coal Creek	50 "	trail,	easy ford.
Little Fort.	56 "	"	over rocky banks.

*Boulder Creek.....	58	miles, trail turns up north bank.
Beaver Lake.....	63	" over high burnt valley.
*Mosquito Flats.....	68	" descends to N. Thompson.
Clearwater Junction.....	73	"
*First crossing of N. Thompson River, 74	"	canoe takes loads, horses swim, no ford.
*Raft River.....	80	" good trail, usually forded.
*Peavine	87	" " grassy country.
*Allingham's Ranch.....	95	" high bench, open country.
Mad River.....	103	" good trail, bridge.
*Round Prairie.....	109	" small meadow.
Wire Cache.	115	" thick timber.
*Stillwater Flats.....	116	" trail brushy, some sloughs.
*Cottonwood Camp.....	126	" brushy, with meadows.
Little Salmon River.....	129	" easy ford.
Lone Grave.....	131	" trail leaves the flats.
*Lone's Meadow.....	133	" hilly.
Hell Gate	135½	" hilly and burnt.
*Sunday Camp.....	142½	" some rocky slides.
*Goose Camp.....	150	" slough and soft spots.
Blue River	152½	" descent steep hill, ford.
*Blue River Meadows.....	154½ miles,	soft, large meadows.
*Beaver Camp.....	155½	" trail good, meadows.
Thunder River.....	162½	" heavily wooded, ford.
*High Bank.....	166½	" trail brushy, fairly good.
*Apparjo Camp.....	183	" rough, boggy and woods.
Cut Bank.....	186	" trail damaged.
Second Crossing, N. Thompson River, 188	"	faded at low water only, feed one mile further on.
Crossing of Albreda.....	195	" trail boggy, ford river.
*Summit Camp.....	204	" trail good, low pass.
*Beaver Camp	207	" " "
*Canoe River Crossing.....	220	" fordable at certain times.
*Starvation Camp	228	" good trail, open valley.
*Tete Jaune Cache.....	236	" banks of Fraser River

*At these points feed may be had for a small band of horses.

Donald Route

The following memorandum relative to the trail from Donald to Tete Jaune Cache is the "log" of a pack-train of about ten horses, the heaviest load of any one animal being 180 lbs. The packer who supplied this information considered this the most feasible and the best route into the district referred to:—

	Miles.	Hours.
Donald to Summit Lake.....	18	.... 7½
Summit Lake to Bush River.....	12	.... 5
Bush River to Cedar River	14	.... 5

	Miles.	Hours.
Cedar River to Middle River	10	8
Middle River to Wood River	28	12
Wood River to Cripple Horse Meadows	22	11
Cripple Horse Meadow to Goat River	14	7
Goat River to Tompkins Creek	10	7 $\frac{1}{2}$
Tompkins Creek to The Jam	12	5
The Jam to Cache Creek	14	7 $\frac{1}{2}$
Cache Creek to Pack Saddle Meadows	12	6
Pack Saddle Meadows to Tete Jaune Cache	20	10
	108	41 $\frac{1}{2}$
	—	—



FREIGHT AND PASSENGER RATES

From Vancouver and Victoria to Port Essington:—
Passengers, single fare, \$17; freight, \$4 to \$5 per ton.

From Vancouver and Victoria to Bella Coola:—Passenger rate, \$13; freight, \$5 to \$6 per ton.

The above rates are on the basis of weight and measurement, ship's option, per ton of 2,000 lbs., or 40 cubic feet.

From Port Essington to Hazelton:—Passengers, first-class, \$17.50; second-class, \$12.50; meals, 75 cents extra; berths, \$1 per day, not exceeding \$2.50 for the trip; 150 lbs. of baggage free; children under 5 years free, over 5 and under 12, half fare.

Freight—Class 1. Dry goods, hardware, liquors, woodenware, crockery, drugs, etc., \$2.50 per 100 lbs. Class 2. Groceries, flour, meats fresh and canned, butter, eggs, cheese, etc., \$2. Class 3. Agricultural implements, brick, cement, lime, machinery settlers' effects, trees, \$1.25; lumber, per M., \$20. Class 4. (Live stock.) Horses and mules, \$15 each; cattle, \$12.50 each (under six months old, 25 per cent. of above rates, over 6 months and under 12 months old, 50 per cent. of above rates); hogs, \$4; sheep, \$3; dogs, \$1.50.

Down-river Fare—Hazelton to Essington, \$10. Down-river freight rates, 75 per cent. of up-river rates.

From Hazelton to Aldermere or Telqua, freight costs 3 to 3 1-2 cents per pound.

Pack horses may be bought or hired at Hazelton, Bella Coola and Ashcroft. Pack horses cost from \$40 to \$60, and upwards.



CENTRAL AND NORTHERN INTERIOR

A Description of the Arable Valleys from Various Official Reports.

THE vast and but little-known territory lying to the west and north of the Fraser River, which was named by the early explorers New Caledonia, and which now includes the Districts of Cassiar, Cariboo and the northern portion of the Coast District of British Columbia, holds within its boundaries a considerable extent of agricultural and pastoral land, the area of which can only be approximately estimated. Portions of the country, lying along the numerous streams which drain it, have been explored from time to time, but most of the work done by the engineers and surveyors was necessarily of such a superficial nature that only a very small percentage of its great natural resources has been brought to light. Sufficient has been accomplished, however, to establish the fact that central British Columbia contains many hundred thousands of acres of land capable of supporting a large population, when it shall have been opened to settlement by the construction of railways. Meantime a few enterprising pioneers have penetrated its fastnesses and are establishing homes for themselves, and these speak enthusiastically of the great resources of the country and its splendid destiny. It is difficult to convey an idea of the extent, possibilities and potentialities of this vast region in a brief space; and, indeed, were every available item of information which exists in regard to it set down in detail, there would still be very much of importance lacking. The principal reports on the country are those made by George M. Dawson, C.M.G., LL.D., F.R.S., late Director of the Geological Survey of Canada, and his assistants; A. L. Poudrier, D.L.S.; N. B. Gauvreau, D.L.S.; George D. Cor-

rigan, D.L.S.; and John Strathern, P.L.S., who were employed by the Provincial Government. There are also others of a more private nature referred to in the body of this Bulletin. All these reports agree as to the one important fact that a very considerable portion of the country is not only fitted for habitation, but well adapted to agricultural pursuits of diverse character, some districts offering exceptional advantages to the cattleman, while others are suited to the needs of the dairyman and mixed farming.

Dr. Dawson estimated that 31,500 square miles of the great Peace River Valley would be found available for agriculture and stock-raising, and his opinion has been confirmed by Professor John Macoun, who states further that at least 10,000 square miles of these rich lands lie within the boundary of British Columbia. In a region so vast, stretching from the 52nd to the 60th degree of north latitude, a variety of climate is encountered. In the south and along the sea coast the climate is very mild and the rainfall so heavy as to preclude the ripening of wheat, but vegetables of all kinds and small fruits grow in great perfection and profusion. On the Coast the snowfall is not great, but at the headwaters of the rivers, in the foot-hills of the Coast Range, it is much heavier. After crossing the Coast Range the climate is drier and the winters are colder, in the north the mercury sometimes falling to 40 degrees below zero; but the cold is not so prolonged as it is east of the Rocky Mountains, the Chinook winds which blow over the land at intervals moderating the temperature to a spring-like degree. Such is the effect of these warm winds that at many places settlers allow their cattle to roam at large all winter and forage for themselves, and they are invariably found to be in first-class condition in the spring. The following actual experiences will illustrate:—

"The first winter that Mr. Benjamin Franklin spent at Tatla Lake a heavy snow storm took place. Being apprehensive of losing his cattle, he so informed the Indians there in the vicinity. Taking shovels, they went into the hay meadow and excavated a trench in the snow. The horses got into it first and the cattle after them. In a few days the Chinook wind came, removed the snow and no animals

were lost. An average natural hay meadow will cut about two and one-half tons to the acre, and about 120 acres may be considered as enough to winter one thousand head of cattle. There are, however, cattle at Tatla Lake three years old that have not eaten hay, and hay more than three years old in the stack."

Mr. H. P. Bell, M.I.C.E., who made a report for the Provincial Government in 1896, says:—

"At one of the highest cattle ranges in British Columbia, the following information was given:—That they used as a general average for winter feed one ton of hay per day for 300 head of cattle for a period of from one to two months' duration, and in the worst of seasons the same amount of feed per day for four months. This present winter they had to put up 186 tons of hay for 300 head of cattle and 100 calves. Nature seems to have supplemented the higher ranges with more abundant natural hay meadows than the lower levels of the country, a beneficent provision more than once noted during the summer of 1895.

"In the neighbourhood of Choiquoit Lake there is an open slope with a southerly exposure where the Indians of the country round about have been accustomed to winter their horses. In reply to a question as to the depth of snow in the winter, a very old Indian replied by intercepting six inches of the end of his riding stick and holding it up. He said that no horse had ever died there, because the wind came and took away the snow. All the horses seen travelling with Indians in this vicinity were in good condition. Asked how long Tatlaico Lake was generally frozen during the winter, the same Indian said, not more than a few days before the wind comes and takes away the snow. The same testimony is corroborated by settlers of that vicinity.

"There is a mountain some 20 miles west of Tatla Lake where a party went to shoot caribou. Having turned their horses loose upon the top of the mountain they were subsequently found in an extensive pasture and in good condition."

Throughout its whole extent the country is watered by innumerable streams and lakes, many of the former being

of considerable size and to a certain extent navigable. These waters, as well as the sea, teem with many varieties of fish, while the forests are full of game, grouse, prairie hens, deer, bear, and many fur-bearing animals, which afford a living to the Indians and conduce to the comfort of the white settlers. Timber in great variety is everywhere plentiful; even in the most open prairie-like country there is an abundance of wood for building and all domestic purposes.

THE WESTERN SLOPE

Mr. Poudrier entered the country by way of Gardner's Inlet, in 1891, and explored the valleys of the Kitlow, Kemanoo, Kitimaat, Skeena and Naas Rivers. Summing up the results of his observations, Mr. Poudrier says:—

"There are a large number of pieces of good land, heavily timbered, along the coast, which could be utilized for agricultural purposes. The valley of the Skeena, the benches above Quatsalix near Hazelton, the valley of the Kispyox, the upper branches, without counting the valley of the Watsonkwa, and the part included in Mr. Gauvreau's field of exploration, after very careful computation, would give 300,000 acres of farming land more or less wooded. The Naas River, its banks, its islands, the valleys of its higher branches, including the valleys of the Tsi-ax to the Skeena, of the Shigaltin to Kitwanga, and the prolongation of the valley from the Tsi-ax, would give an approximate area of 700,000 acres of farming land. Of this, three-fourths is wooded and the rest is either cleared or covered only with light thickets. Of the higher land, exposed to the summer frost, and where wheat could not be grown, and of high pasture land, there are several scattered areas. Around Kit-wan-coole, the higher benches on the Upper Skeena and Naas, the high plateau lying between the different branches of the Naas and between its watershed and the Stikine, can all be utilized as grazing land and classified as such. One and a half million acres would be about a correct estimate of the grazing land available. All the area west of the Cascade Range is damp and rainy. Near the sea the snowfall is not great, but at some points up the river it is more than six feet. After crossing the mountains the climate gets much

drier, but in no part of the country explored by me would irrigation be necessary, unless it would be in some of the valleys at the head of the Skoot. The climate of winter about Hazelton and at the corresponding point of the Naas is very cold, but the cold is not so prolonged as it is east of the Rockies; there are always one or more thaws during the season. Observation of the gardening done by the Indians shows that, although their lands are very poorly cultivated, they yield well, while the season is about the same as in the west of the Province of Quebec. In no part has the timber been found in very large quantity as would in the future warrant the hope of exportation, except perhaps the giant cedar and the spruce; but everywhere it is sufficient for every local use when once the country is settled. No doubt the balsam, poplar, the aspen, the cottonwood and the birch will some day be of value for the manufacture of wood pulp."

QUESNEL TO OMINECA

Mr. Gauvreau's observations include the country between the above-mentioned places, and he travelled via the Telegraph Trail through the Nechaco to Fraser Lake, thence following the Endako and Bulkley Rivers to the Suskwa Valley. He then took the Babine Trail to the lake of that name and went over Frying Pan Pass to the Tita system of lakes. He completed his work by making an investigation of these lakes and connecting rivers.

He reported that the valley of the Endako, with an average width of four miles, contains many open spaces of good land and hay meadows, but most of it is covered with timber that can be easily cleared. At the headwaters is a fine tract suitable for cattle ranges, with very rich grasses and pea-vine and vetches in profusion. The thickly wooded mountains round Babine Lake and from there to Tremblay Lake is only of value for timber, and possibly minerals, and there is little agricultural land, except near Nation Lake, where several good hay meadows exist. Na-kat-at Valley, on Stuart Lake, contains about 24 square miles of rich open land, all good pasture and some suitable for hardy vegetables and cereals. There is not much open land between Stuart

and McLeod Lakes, but a large portion will be of value when cleared.

As Giscome Portage is reached the quality of the land improves, there being considerable tracts of good soil, some grassy flats and wooded benches. Further north there are no large areas of agricultural lands. Cattle would do well at many points and, as mining increases, there should be a local market for all the produce raised.

Mr. F. W. Valleur, Gold Commissioner, also went over this route in the summer of 1901. The following are extracts from his report:—

“From Manson to Stuart Lake, a distance of about 125 miles, I followed the Manson-Quesnel Trail. The country between the above-named places is of a rolling character, the greater portion having been swept by fires, the result of which is that it is covered with fallen timber and a second growth of small jack pine and poplar. The trail crosses a large number of creeks, in none of which, so far as I could ascertain, has gold been found in paying quantities.

“The surface shows a heavy wash of boulders and gravel southward from Manson to within about 30 miles of Fort St. James, when the character of the country changes and becomes more level, with large tracts of open prairie and hay meadows. The only considerable height is Lookout Mountain, about 25 miles north of Fort St. James.

“From Lookout Mountain to Fort St. James the timber consists of poplar and cottonwood, with a few white birch, some of the latter being quite large. Grouse and fool-hens are very plentiful along the trail, but we shot very few, owing to most of them having their young with them. I was obliged to camp on the trail for a day and a half on account of heavy rains, and reached Fort St. James, a Hudson Bay post at the south end of Stuart Lake, on July 26th.

“From St. James to Fort McLeod the country is almost level, well timbered with pine, spruce and poplar, and dotted with innumerable beautiful lakes. The soil for 30 miles east from Fort St. James is very fertile, pea-vine and wild timothy growing to a height of four feet in many places. The trail, although grown up with young pines and willows,

is a good one, and there is a fine hard bottom for nearly the whole distance. The trail is only used by the Hudson's Bay Company for transporting supplies from Fort St. James to their outlying posts. A few years ago a small number of prospectors used it to reach the Peace River, but none have passed over it for the last three or four years."

THE BULKLEY VALLEY

The Bulkley River flows into the Skeena at Hazelton, but what is known as the Bulkley Valley does not commence until after Moricetown is passed, about 30 miles from the head of steamboat navigation. The Bulkley, as far south as Moricetown, is confined to rocky canyons, and the only agricultural lands are two patches of prairie not far north of that place. The Indians at Moricetown have good gardens and grow good crops of potatoes and other vegetables. The surface soil is a rich, sandy loam, with clay sub-soil. Not more than two feet of snow is stated to fall in any part of the valley, but cattle require to be fed from Christmas until about April 10th.

The valley from Moricetown to Fraser Lake, a distance of 100 miles, is practically all available for agricultural purposes. The natural vegetation is most luxuriant and berries of many kinds extremely prolific. Cottonwood, poplar, small spruce and birch form the principal timber, and there is ample for all local purposes. Where the timber has been burnt over, open prairie-like spots are frequent, with grass sometimes reaching a height of five feet, mingled with pea-vine.

Mr. J. W. McIntosh, who investigated the country in 1903, at the request of the Provincial Government, sums up his impressions in the following words:—

"The soil is mostly first-class, and where the country is not wholly open it could very easily be cleared by the aid of fire, the timber for the most part being small poplar, pine and spruce. Good grazing is found all through the woods, the pea-vine and red-top grasses growing as high as a man's head, as could be seen from the remains of last year's grasses.

An Ideal Cattle Country

"Along the north and east sides of Aldermere Lake, which is a beautiful sheet of water, are fine patches of prairie covered with a rank growth of grass and pea-vine.

"The lake abounds in fish, as do all the lakes and streams in that country. Some families of Indians living on the shore of the lake were engaged in catching and smoking trout for next winter's use. The trout here would average two pounds in weight. Between here and Rosemere Lake, which is situated on Section 15, in Township 6, is a first-class stock country, with a large proportion of open prairie.

"Spurs from the Babine Range of mountains to the east approach to within a short distance of the lakes mentioned. Though the soil on these hills would be too light for farming, they are covered with rich grasses, making splendid pasture ground for stock.

"The altitude of Aldermere Lake, as shown by aneroid, is 1,700 feet, and that of Rosemere Lake is 1,900 feet. There are some beautiful patches of prairie on the north and east side of Rosemere Lake, some of them several hundred acres in extent. The country for several miles to the east appears to be of the same general description as that passed through between the two lakes mentioned. The country at one time appears to have been covered with spruce and pine, which has been burnt off and in most of the places succeeded by a light growth of poplar, a tree which is very easy to clear, as a fire started during the time the grass is dry will kill the tree, which the season following can be burnt up by starting a fire in the proper time.

"From Rosemere Lake to the southern boundary of Township 9 large patches of prairie occur, varied by strips of spruce, pine and poplar bush. Several nice streams, which rise in the Babine Range, to the east, cross the trail. The valley, from the H. B. Company's ranch south, would average about ten miles in width, though exceeding that width in some places. Spurs from the mountain ranges on all sides in some places approach close to the river. The widest portion of the valley appears to be on the west side

of the Bulkley, which here is a rapid stream about 500 feet wide. The western portion of the valley appears to be more heavily timbered than that on the east side, but from the tops of hills on the east side of the river we were able to see several open patches of prairie, and an Indian whom we had with us told us that the same character of country existed on the west as on the east side. We were unable to cross the river and more closely examine the country there, as the water was too high and no canoes were at that time procurable.

"The most distant point in the valley reached by us was at the point where the Morice River from the south-west joins the Bulkley, which here flows in a north-westerly direction. This point was reached on May 12th, and is 94 miles from Hazelton. The altitude here is about 2,500 feet. At this date, May 21st, the poplar and cottonwood trees were beginning to open their leaves, and the grasses had a good start. Light frosts occurred twelve nights during the month of May, ranging from one to ten degrees of frost. On our return journey to Hazelton we noticed that vegetation appeared to be farther advanced in the country around Rosemere and Aldermere Lakes than in any other portion of the valley.

"From the H. B. Company's ranch, in Township 9, up to the farthest point reached by us, I would call a first-class country in which to raise stock, there being splendid grazing over nearly the whole country, and a large quantity of hay can be cut on the open patches of prairie, and these could be largely and easily extended by the aid of fire. In regard to the agricultural possibilities of the said section of country, were a market for farm produce established, which at present is totally wanting, I would say that, from experiments made by Mr. Hill, of the H. B. Company's farm, and from the fact that the Indians in the valley, at Moricetown and elsewhere, have for several years past succeeded in growing as fine potatoes as can be raised anywhere, there is no doubt that, with a proper system of agriculture, oats and barley, as well as root crops, can be successfully grown."

Mr. D. McMillan also made a detailed report and reached similar conclusions. He said:—

"In regard to the climate of the Bulkley Valley, we were informed by Mr. Hill, the manager of the H. B. Company's farm, that the lowest the thermometer registered last winter was 26 degrees below. It reached zero on twelve other days last winter. The weather in summer is sometimes very hot, the thermometer registering 102 degrees twice while we were in the valley. The snowfall, on an average, is about 15 inches in winter, but varies according to location. Cattle have to be fed from Christmas to about 1st of May. Similar information was obtained from other reliable gentlemen who had lived in the valley during the winter. Mr. Hill also informed us that summer frosts were liable to come during any month in the summer, but by choosing a location fronting to the west, so that the morning sun would not strike too hot, there was no trouble to raise potatoes and other root crops. The Indians at Moricetown raise fine potatoes, and those grown by Mr. Hill on the H. B. Company's farm were as good potatoes as I have ever seen. I think that, as the country gets cleared up and larger openings made, the danger from summer frosts will, to a great extent, disappear. Throughout the whole valley sufficient timber for building and fencing purposes can easily be secured, but there is but very little timber suitable for milling purposes.

"Taking the valley on the whole, I consider it a first-class country for stock-raising, there being good grazing everywhere, as well as on the open patches. Sufficient hay to winter a limited number of stock can be cut on the open meadows, and where the bush has been burnt off it is followed by a rank growth of grass.

"Timothy hay does very well. Mr. Hill showed me some meadows which he had seeded down to timothy, and he stated that last season the hay on them grew as tall as a man's head, and would cut five tons to the acre."

A SETTLER'S EXPERIENCE

Mr. Fred. Heal, Jr., Aldermere Ranch, Bulkley Valley, writes to the Bureau of Provincial Information as follows:—

I beg to enclose results of my observations taken in the Bulkley Valley, during four years' residence in that district.

The summer of 1904 was the coldest experienced for many years in the Valley and on the Skeena River, but despite the unfavourable weather all the hardy vegetables gave a very fair yield; potatoes were a poor crop. The hottest day was 69 degrees, in July, and the coldest, 18 below zero, in January, 1905. The average summer temperature was:—Highest, 76 degrees; lowest, 34 degrees; mean, 55 degrees. The first snow of the winter of 1904-5 fell on the 16th of November, but did not stay. Several light falls of snow occurred before Christmas, most of which disappeared. The first heavy fall of snow was on January 2nd, and another fall on January 24th. The greatest average depth of snow was 16 inches.

For the summer of 1905, the highest the thermometer registered was 92 degrees, on July 25th. During the winter of 1905-6 the highest temperature in January was 47 degrees; the lowest, 29 degrees below zero. In February, the highest 45 degrees, lowest 3 degrees. In March, the highest 54 degrees, lowest 4 degrees. On the 3 coldest days in winter the average temperature was 12 degrees below zero; on the 3 warmest days in winter the thermometer registered on the average 49 degrees.

To give an idea of the beautiful days experienced during this winter, I will give the hours of sunshine:—January, 100 hours; February, 160 hours; March 170 hours. These were bright days and cool enough to be pleasant.

Snow came earlier in 1905, four inches falling on September 22nd, but disappeared the next day. After that nice weather was experienced until about the middle of October, when quite a number of degrees of frost were registered. From that time until November 25th there was no snow to speak of, when 8 inches fell. A cold spell (16 below) was then experienced, after which the snow disappeared, a warm wind came, and it remained mild with no snow until after Christmas, when 2 inches fell for New Year's Day.

On January 13th there was 3 inches of snow on the ground, and so on throughout the winter, the snow came and went. Of course, in the shade and in the timber the snow

remained all winter, but the greatest depth at any one time was 8 inches in the open.

During the summer of 1906 the highest the thermometer registered was 98 degrees, on the 7th, 13th and 14th of July. The coldest day in the winter of 1906-7 was 38 below zero, on February 3rd; the warmest winter's day was 50 above zero, on the 17th of February.

The first flurry of snow fell on the 27th of October; again, on the 31st, one-half inch fell. Light falls of snow occurred until the 4th of December, when 9 inches lay on the ground. On the 18th of December a thaw set in, which lasted a few days. Towards the end of the month several falls of snow occurred and the thermometer dropped to zero.

By January 6th, 1907, 30 inches of snow lay on the ground; the thermometer registered below zero every morning until February 6th, when a slight thaw set in and continued mild until March, when the thermometer registered 10 below zero on two or three mornings. After this the remainder of the winter was normal and mild. The snow was practically all gone on the 19th of April.

Indians and others say that this winter was the severest they had known in 20 years.

Out of 600 odd head of cattle and horses wintered in the Valley that year, no casualties occurred through the severity of the weather. This speaks well for the adaptability of the country for cattle.

In the summer of 1907 the highest the thermometer registered was 102 degrees in the shade, on July 30th.

The winter of 1907-8 was the mildest since 1904. The coldest day was 12 degrees below zero, on March 4th, and only on seven other days the thermometer registered below zero. The first snow this winter fell on November 1st, other flurries on the 7th and 11th. The ground was bare in the openings on November 30th. Several falls of snow occurred during December, until the greatest depth reached 12 inches, being plenty of snow for sleighing, while the days were sufficiently cool to prevent the snow from thawing.

I append seasonal notes of above years for comparison:—

Highest Temperature—1904, 90 degrees; 1905, 92 degrees; 1906, 98 degrees; 1907, 102 degrees.

Lowest Temperature—1904-5, 18 degrees below zero; 1905-6, 29 degrees below zero; 1906-7, 38 degrees below zero; 1907-8, 12 degrees below zero.

Greatest Depth Snowfall—1904-5, 16 inches; 1905-6, 8 inches; 1906-7, 30 inches; 1907-8, 12 inches.

First Snow—1904-5, November 16th; 1905-6, September 22nd; 1906-7, October 27th; 1907-8, November 1st.

Aldermere Lake frozen over—1904-5, December 3rd; 1905-6, December 10th; 1906-7, December 6th; 1907-8, December 8th.

Bulkley River Frozen in Places—1904-5, January 9th; 1905-6, February 21st; 1906-7, February 15th; 1907-8, February 6th.

Robins Arrived—1905, March 10th; 1906, March 23rd; 1907, March 20th.

Bulkley River Ice Jam Gone Out—1905, April 6th; 1906, March 30th; 1907, April 21st.

Butterflies Seen—1905, April 2nd; 1906, March 25th; 1907, March 30th.

Bluebirds Arrive—1905, March 10th; 1906, March 26th; 1907, March 21st.

Grouse Drumming—1905, March 29th; 1906, March 26th; 1907, April 1st.

Aldermere Lake Open—1905, April 9th; 1906, March 28th; 1907, May 6th.

Snowbirds Arrive—1905, April 6th; 1906, March 28th; 1907, March 31st.

Ducks Seen—1905, April 9th; 1906, March 30th; 1907, May 2nd.

Bumble Bees—1905, April 8th; 1906, April 3rd; 1907, April 26th.

Swallows—1905, April 21st; 1906, April 14th; 1907, May 8th.

Kingfishers—1905, May 3rd; 1906, April 14th; 1907, May 6th.

Geese—1905, April 19th; 1906, April 15th; 1907, April 17th.

Swan—1905, April 19th; 1906, April 19th; 1907, April 18th.

Loons—1905, April 16th; 1906, April 19th; 1907, April 21st.

Snipe—1905, April 22nd; 1906, April 24th; 1907, April 26th.

From the foregoing one can form some idea of the character of the seasons and the climate in this district. Personally, I think the climate of the Bulkley Valley is everything that could be wished for.

In the summers there is plenty of sunshine, and sufficient rain to nourish the crops; the frosts in summer are not severe enough to do harm. It is true that some winters the thermometer gets rather low; yet there is no wind, and the cold is dry, hence it is not felt nearly so badly as a damp cold attended by a wind. The soil on the average is excellent and well adapted for farming. Cereals and all kinds of vegetables do exceptionally well, and would compare favorably with cereals and vegetables produced elsewhere in the Province.

Besides the agricultural resources, there are large coal deposits lying on the west flank of the Valley; while in the neighbouring hills large deposits of copper-gold bearing quartz claims have been located, and are in course of development. Any one of these resources would be the backbone of any community, though they are at present lying practically dormant. Yet in a very few years, with the opening up of the country, the Bulkley Valley will forge ahead and take its place as the leading section of New British Columbia.

AN EXPLORER'S OBSERVATIONS

W. Fleet Robertson, Provincial Mineralogist, who explored portions of the Central Interior in the summer of 1905, says of the general character and agricultural possibilities of the country through which he passed:

"We started from Victoria on the 12th of July, 1905, and picked up our pack-train at the 150-Mile House, on the Cariboo Road, and started out for Quesnel, proceeding

thence through the Blackwater to Stoney Creek over the Telegraph Trail, which is in country so easy of travel that very little would render it passable for a waggon road. From there we cut up through the Nechoe country, swimming the Nechoe River, which is about 600 feet wide at this point, and so on to Stewart's Lake, Fraser Lake, Cheslatta, Oot-a and Francais Lakes; then over the summit into the Bulkley Valley, following that down to Hazelton, making side trips up the Telkwa River and into the Babine range of mountains, and likewise a short and profitable trip on from Moricetown over the summit, on to the headwaters of the Copper River, and thence back to Hazelton.

"Along the valley of the Blackwater there is a certain amount of good land, which will eventually be cultivated, and at present only lacks transportation. Land there, though limited in extent, is

Good for Mixed Farming

"The valley of the Nechoe is an old, wide lake bottom, through which the present stream cuts its way. The country is bench land, generally covered with a growth of poplar, in which are many open patches of considerable size, covered with a good growth of wild grass, whilst the poplar woods are easily cleared away and the soil is apparently rich, judging from the growth it sustains. Samples of the soil at various points were taken for analysis. In this vicinity a large number of men have taken pre-emptions and placed scrip with the probable intention of becoming settlers, supposing that they are on the route of the Grand Trunk Pacific. Around Stuart Lake there is a large quantity of bench land somewhat similar in description, but with more clay soil, which seems to the eye to be equally good if not better than the Nechoe, but which seems to have been overlooked by homesteaders, probably from the fact that the open patches here are not so large, which would necessitate more initial outlay of labour to bring it under cultivation. At Stuart Lake the Hudson's Bay factor, Mr. Murray, has for a long time maintained a garden in which he raises most of the small fruits and vegetables with success.

Certainly this year his crop was highly satisfactory. The potatoes were good and he reports having had good raspberries and strawberries, although they were over at that season.

Wheat, Barley and Oats

"At Fraser Lake the Hudson's Bay manager, Mr. Peters, has done something in the way of farming, and is growing barley, bearded and Russian, wheat, oats and timothy.

"Samples of wheat, representing the average yield and not picked samples, I sent down to Mr. Palmer for exhibition at the Westminster Fair. These samples speak for themselves and also for the energy of the factor of this post.

"Along to the north of Fraser Lake and to the north of Francois Lake there are patches of good land of considerable size existing under similar conditions as that which Mr. Peters has cultivated. Between Fraser and Cheslatta Lake there is little or no country of value. Along Cheslatta Lake there are a few isolated pieces of bottom land which would make good farms, but there is here no large extent of country of value. Between Cheslatta and Ootsa Lakes, up the valley of the stream flowing into Cheslatta, there is a considerable area of land affording excellent summer grazing, while marsh hay is abundant in the valleys. On the south of Ootsa Lake the hills rise rapidly from the lake, and as far as the eye can reach are timbered with a small growth of coniferous trees, and there did not appear to be any land very attractive from an agricultural standpoint.

Rich Grass Lands

North of the lake, on the Ootsa Lake slope, there is a certain amount of open grass land which in area is small, compared with that found on the Francois Lake slope, south of that lake, in which latter part there are extensive open patches of many thousands of acres, covered with a most luxurious growth of wild grasses. Situated on rolling hills at an elevation of a few hundred feet above the lake, the ground is in a condition to permit of an almost unlimited amount of hay being cut at once with a mower. Much of

this country has been taken up by script and by pre-emption, but it is believed there are still large areas unclaimed. Among the earlier pre-emptors of this district is Maitland, who has secured about a square mile of open land well watered by a small lake, on most of which hay could be made at once. This place is only mentioned as an example of a number of others, because Mr. Maitland was not on the ground and his land could not be identified. As yet no attempt has been made at permanent settlement, and no hay has been put up, so far as was seen. The grass is wild barley grass, with prairie and fireweed, making excellent hay for summer feet. Whether this would serve for winter grazing, I leave it for some rancher to say. The elevation of this section of the country will be about 3,000 feet above sea level. From Francais Lake the trail over into the Bulkley passes through a considerable area of country in which soil for the most part appears to be excellent, but there are comparatively few open patches, the timber being poplar and spruce. The Bulkley Valley was struck at what is known as Pleasant Valley, a few miles above where the Morice River flows in.

"This valley is approximately a thousand feet lower in elevation than the Francais Lake country. Pleasant Valley is a low-lying, wide valley, surrounded on the south by foot-hills and bench land. The valley is largely free of timber, but where not is covered with poplar and some fir, and here was first met that luxuriant growth of prairie and wild grass, of which previous accounts have been told, a growth so rank and luxuriant as to render

Exaggeration Difficult

There is said to be some 7,000 acres of land taken up in this valley. These figures are unofficial.

"As yet in this section there has been little attempt at cultivation, the locations having only recently been made, and the building of cabins having occupied the attention of locators. A few miles north-west of this is what is known as the old Government Ranch, now held by Charleston and Barrett, where for four years large quantities of hay have

been cut by mowing machine and put up on the same piece of ground. The crop this year was good, indicating that the ground will sustain a continued crop for at least that length of time.

"Further up the valley, on the Telegraph Trail, the McInnes Bros. and others have ranches, reported to be equally good, although they were not personally seen. From this point down to Moricetown the Bulkley Valley, in its wider sense, consists of rolling hills sloping towards the river and bounded on the north by the Babine range of mountains. These rolling hills rise to 600 or 700 feet above the river and extend to a width averaging possibly four to six miles, a large portion of which is suitable for cultivation, and much of which is covered with a luxuriant growth of grasses and pea-vines, as already mentioned.

Conclusions

"Throughout the districts mentioned there is certainly a large area of country suited to farming. Summer frosts are not unknown, but experience elsewhere has shown that these are liable to disappear with the advent of cultivation. No large extent of bunch-grass, such as is known in Alberta, and which forms the winter grazing of that section, was seen, and it is probable that winter feeding of stock would be necessary for a period, depending upon the winter. In other words, the country is a farming rather than a cattle ranging district. At Round Lake, a few miles above the mouth of the Telkwa, and in the main valley, Mr. Lecroix has one of the most advanced settlements of the district, and he has a small but excellent herd of dairy cattle in excellent condition. The dairy, under the management of his wife, turns out excellent butter sufficient 'to keep the pot boiling.' The vegetable garden was seen filled with all the more usual vegetables, such as beets, carrots, turnips, cabbage, tomatoes, peas, beans, cucumbers, and such like, all ripening and doing well. An attempt had been made at growing sweet corn, on which the ears did not seem liable to mature.

Minerals and Coal

"This is simply an outline, of course, drawn from memory entirely and possibly subject to correction in minor de-

tails. As regards the mineral prospects of the country, I am not prepared to say much at this stage, pending the completion of various analyses, but there are undoubtedly some very fine specimens of ore, and it is probable that it is premature to form any conclusive judgment with regard to the extent of these deposits, as the majority are locations of but a season or so standing. In the Telkwa, I may mention, there are very good looking coal deposits, the beds being of very considerable thickness."

CONDITIONS IN BULKLEY VALLEY, 1906-7

J. H. Gray, C.E., writing under date April 3rd, 1907, reports as follows:—

"Relating to the present conditions in the Bulkley Valley. There were surveyed last year about one hundred thousand acres, covering for the most part that portion of the valley embraced within the original survey as shown by the present maps.

"Of the above area some 26,000 acres have been acquired through South African War Scrip, about 20,000 acres have been pre-empted, and probably about as much more purchased; or, approximately, alienations within the surveyed area amounting to 66,000 acres, leaving some 34,000 acres unoccupied.

"It may be accepted that this latter constitutes the least desirable land within that particular locality, although generally speaking, it is for the most part susceptible to cultivation and worthy of examination by intending settlers. There is, however, in addition to this a large unsurveyed area lying towards the north and south ends of the valley, comprising probably 30,000 acres, which from a superficial examination promises favourable results. These lands are for the most part, on the opposite side of the Bulkley River and distant from the main trail.

"I should advise intending settlers to band themselves into companies of, say, half a dozen, for the purpose of obviating in some degree the isolation that will attach to these more outlying areas for a few years.

"Settlement of the valley is steadily progressing; the population may now be set at about one hundred. All crops last year did splendidly. I had no trouble in obtaining all the potatoes, turnips, cabbage and beets required; while a good supply of radishes, lettuce and cauliflower was forthcoming, and all of the very best quality. Vegetables all round cost 3 cents per pound. Beef, which is plentiful, is 16 cents per pound.

"Work last year was plentiful, what between Government road work, the Telqua and other mining and surveys, there was a demand for good men. There is all indication that the same conditions will pertain this season.

"There are now established at Aldermere and Telkwa three good stores at which everything one requires may be obtained.

"Persons entering the country by way of Skeena and Hazelton would be able to obtain horses at the latter point. These cost from \$40 to \$60 per head. Packing from Hazelton to the Telkwa, about 60 miles, costs 3 to 3 1-2 cents per pound.

"Last winter was the most extremely severe known in the valley, as also the deepest snowfall. I prosecuted surveying operations to about the 20th of January and throughout the cold spell. Snow was 2 1-2 feet deep, our coldest day 38 degrees, and an average of about 18 degrees for a month. Perfectly still, sunny days was the rule, the thermometer rising with snow. As compared with winter in the East, I would consider it more favourable. Stock were doing well when I left in February, though being fed. With the beginning of February came a break of warm weather, which I understand lasted for two weeks, and since which time the winter has been normal and mild."

NEW ENTERPRISES

During the season of navigation (1908) the Hudson's Bay Company will operate two steamers, and the new British Columbia Commercial Company will also have one or two boats, between Port Essington and Hazelton. There are hotels and well-stocked stores at Essington,

Kitsilas, Hazelton, Aldermere and Telqua, where provisions and outfits may be purchased. A waggon bridge will be constructed across the Bulkley River near its junction with the Telqua, which will greatly facilitate travel. There is every indication that there will be a great demand for pack animals and a corresponding advance in prices. The New British Columbia Commercial Company is importing a large number of horses, which will be employed in freighting and hired to prospectors and land-seekers.

AS A FRUIT COUNTRY

The country is so sparsely settled that so far little attention has been given to fruit-growing, but the evidence at hand would lead to the conclusion that all the hardier varieties of apples, pears and plums, and all varieties of small fruits, will succeed in many localities. Speaking of the Coast District from Jervis Inlet to the Skeena River, Mr. Maxwell Smith, Dominion Fruit Inspector, says: "There is little known of its capabilities, but, undoubtedly, it has a few surprises in store for the future. Though in small quantities as yet, apples, peaches and grapes have been successfully grown on the Skeena. The first apple trees were planted at Hazelton in the spring of 1901, and fruited in the fall of 1904." Apples of good quality have been grown for years at Barkerville. In the Bulkley Valley there are at present about 100 young apple trees which have stood the winters well for three years, and will probably begin bearing fruit this year.

OOTSA LAKE

What is known as the Ootsa (Ootsabunket) Lake country was practically discovered by accident. Desiring to ascertain if a practicable route into Bulkley Valley could be found from the head of Gardner Inlet, the Government sent a party into the district for that purpose. Though they did not find a suitable pass through the mountains, their trip was successful in other directions. They discovered considerable areas of still better land than that in the Bulkley Valley, with a better climate and more favourable conditions for settlement. The only practicable route at present

is via Bella Coola, the following being an approximate table of distances:—

Victoria or Vancouver to Bella Coola, by steamer .....	.....	415 miles.
Waggon road along Bella Coola River .....	.....	20 "
End of waggon road to Ootsa River crossing, by trail. ....	.....	130 "
		565 "

The journey by land occupies from 12 to 15 days with loaded pack-horses. There is also another route from the end of the waggon road, by the valley of Anaham Lake. This is 170 miles, and loaded horses take about 20 days to make it.

It may be well to give here some details of the country passed en route from Bella Coola, gleaned from the reports of Messrs. J. W. McIntosh and V. M. Scribner.

The first 20 miles of the Bella Coola Valley, or until the river is crossed, is from two to three miles in width. It is heavily timbered with spruce, hemlock, fir, poplar, alder, maple and some small cedar. The soil is sandy loam, somewhat light in spots, and where cleared there is a promise of good crops. The whole length of the valley is about 41 miles; but settlement does not extend further than the crossing.

After the crossing there is a steep mountain trail of about five miles, but, even at the summit, there is plenty of grass. There is a gradual slope from the summit to the headwaters of the Salmon River, a distance of five miles, and everywhere plenty of grass. The next ten miles along the valley is a good grazing country, well watered and fairly level. The next ten miles, to the south end of Takia Lake, is rocky and dry, with the exception of a large meadow, about 185 acres, at the lake. After 15 miles through good grazing land, especially where timber has been burned, Salmon River proper is reached. From there to Elkatcho, an Indian village, there are nice-looking, but wet, meadows. Between Elkatcho and Tschic Lake, 10 miles further on, the land is all timber and brule, the soil no good. From the north end of Tschic Lake a stream runs to Entiako Lake, about 8 miles, along which there is a meadow half a mile wide. Several large beaver dams were seen along the stream.

Between Tschic Lake and Tetabunket the country is said to be worthless, but from there on it is apparently all of great value.

To continue from Mr. McIntosh's report:—

"Went in a northerly direction 6 miles to the crossing of Eutsha River, which here is 200 yards wide and very deep, and reached the west end of Cheslatta Lake that night. The trail passed through splendid grass-grazing lands. The following few days we prospected the country about here. On August 3rd went to Ootsa Lake and passed through a good deal of open country covered with the richest of grass. The timber is mostly poplar, spruce and pine.

"The country round the west end of Cheslatta Lake is a splendid grazing country; but not of large extent. On the tops of the hills near the lake is an abundance of pea-vine to be found and other nutritious grasses. In some of the open spots is a species of bunch-grass. There is room here for several good ranches. From the west end of Cheslatta Lake for 30 miles, bordering on Ootsa Lake, is a tract of at least 115,000 acres of good grazing land, a large percentage of which is suitable for agriculture; a good deal of it is loamy soil. The country between that and Francais Lake is mostly timbered, but wherever poplar occurs there is good grass, mostly pea-vine. The trail from Ootsa Lake runs in a north-westerly direction to the west end of Francais Lake, a distance of 20 miles. The last 10 miles is mostly timbered, with occasional patches of open grass-land. The Indians claim that the climate here is much better than at Bulkley, the snowfall being seldom more than 6 inches. From the west end of Francais Lake east on the north side, as far as one could see, there is considerable good country, with occasional large open patches covered with very fine grass. The Indians say that there is a large amount of open country there.

"From here (August 10th) we went north a distance of 53 miles to Bulkley Valley. For 12 miles through the valley of the Zumgozli River there is a very good grazing country, after which the trail strikes the Bulkley. A good many pre-emption claims had been staked off. Morice River, called

after Father Morice, which is really the main part of the Bulkley River, comes in from the south-west and contains at least five times the volume of water that is in the river marked 'Bulkley' going from the east. The Zumgozli River goes from the south and east from a small lake. Fine gold has been found on the Zumgozli and in some of its tributaries. No large extent of open country exists here.

As to Climate

"Considerable doubt has been expressed by people who have travelled in the northern interior of British Columbia as to its suitability as an agricultural country, on account of summer frosts. I can only speak from what I have seen myself, and I would say that I left the Ootsa Lake country this year (1903) on August 28th, and up to that date there had been no sign of summer frost. The Indians living at the west end of Cheslatta Lake had some small patches of potatoes and other vegetables growing there, and had there been any frost the potato tops would have shown signs of it and been blackened; on the contrary, I never saw healthier or fresher looking tops. The pea-vine also, which is very easily blackened by frost, was untouched. The weather, during most of the time I was in the Ootsa Lake country, from August 2nd to 28th, was rather hot. There were thunder showers nearly every afternoon. The prevailing winds appear to be from the west. We noticed that wherever a tree was blown down by the wind its top was pointing east. The Indians said that Chinook winds blow frequently in winter, taking away whatever snow there may be on the slopes facing the west and south. The Indians have quite a number of horses in that country, which are allowed to roam at will and make their own living in winter, without being fed by anyone.

"On the slopes of the hills facing the south and west, where the snow never covers the grass, I think a limited number of cattle could also find sufficient feed in the winter time. The Indians say that it is not nearly as cold in winter time in the Ootsa and Cheslatta Lake country as it is around Fraser Lake or in the Bulkley Valley. The eastern half of Francois Lake does not freeze over, and some of the

rivers also remain open, so the Indians informed us. This can only be accounted for by the proximity of that portion of the country to the salt water at Kitlode Inlet, which extends well in through the Coast Range, and a low pass at its head permitting the warm breezes from the Pacific to enter the country and temper the climate. According to the Indians, snow is all gone by the middle of the month of February and rain during the winter months is unknown. The soil is very productive over a considerable portion of the country between Ootsa and Francais Lakes, as well as in the Bulkley Valley, potatoes and other vegetables, where planted, giving a large yield and of a superior quality. I can see no reason why wheat, if sown, should not do well, as the soil and summer climate is very similar to that of the North-West.

"The whole country affords excellent opportunities for the sportsman, game being plentiful and the fishing the best in the world. The lakes are filled with trout and char, and a species of whitefish, but not the same as the whitefish of Manitoba. I have seen the Indians set a small net about 60 feet long and 3 feet deep, in the evening, off a point on Ootsa Lake, and in the morning there would be over 150 pounds of trout caught in the net. We saw a good many deer while there. They are as heavy as two of the Coast deer, and their flesh the tenderest meat I ever ate. They are always fat, as there is an abundance of pea-vine everywhere.

"Taking the open and partly open country lying between Ootsa Lake, on the south, and the Hudson's Bay Co.'s ranch in the Bulkley Valley, on the north, without going east any further than Fraser Lake, I consider there is ample room for 500 good stock ranches, and I know of no other country where the conditions are more favourable for stock-raising, if it were not for the lack of roads, by which cattle could be driven to a market, and by which provisions and implements could be brought in."

The following extracts from a report furnished the Bureau by Mr. M. V. Scribner, are published in confirmation:—

"Most of the country is timbered with spruce, black pine and poplar. The best land is among the poplar timber. The soil is gravelly loam, and the vegetation very rank. There are seven or eight different kinds of native grasses; the pea-vine in places was waist high when I was in the saddle riding through the poplar timber.

"There are many small lakes and ponds along the north side of Ootsa Lake, from one-half to two miles back and scattered across to Francais Lake. They form natural reservoirs and most of them could be used to irrigate the surrounding land in dry seasons.

"Of wild fruit the high-bush cranberry was very abundant; also the saskatoon or service berry. The salal, gooseberry and strawberry were quite plentiful on the trail. Trout, whitefish, char and a species of freshwater smelt were plentiful. The Indians were catching large quantities in nets when I was at Cheslatta. The woods swarm with rabbits. Deer and bear are plentiful, but the smaller fur-bearing animals are becoming scarce. Fox and lynx are quite plentiful. Beaver, mink and marten are very scarce. The Indians are friendly and glad to see the white people come.

"There are good claims for about 150 settlers in the Ootsa Lake District, with many valleys to the north and east that I did not have time to explore, but was told that there was good land in the most of them. The present trails are very poor, dim and hard to follow. The present cost of packing from Bella Coola to Ootsa Lake is about five cents per pound.

"I am well pleased with the country surrounding Ootsa Lake, and believe it has a bright future, but cannot advise people of very limited means to attempt to go there to settle, as the cost of getting in is considerable, and it may be two or three years before there are any nearby markets or easy means of transportation. People who have had experience in frontier life will get along more easily than those who have not. There will be hardships and difficulties to overcome, but those who persevere will, without doubt, be amply rewarded."

Supplementary to the above report, which was dated December, 1904, Mr. Scribner writes on May 30th, 1905:—

"I have just returned from a trip to the Chilcotin, and wish to say that between the head of the Bella Coola Valley and the Chelanco, on the Upper Salmon River, I saw several thousand acres of fine meadows that are lying vacant. The soil looks good; the altitude, as near as I could learn, ran from 3,000 to 3,800 feet, and one of the only two settlers in there informed me that last winter the snow was only 16 inches in depth. There are many small lakes and streams, and I would say that there was hay and pasturage on good grazing ground for many thousand head of cattle, if utilized for that purpose."

FRANCAIS LAKE

This lake lies to the north of Ootsabunket, and the country surrounding is very similar to that in the vicinity of the latter. Dr. Dawson, in his report often quoted in this Bulletin, gives his observations as follows:—

"Francis Lake has a length, according to my track survey, which was carefully checked by micrometer measurements, of fifty-seven and three-quarter miles, with an average width of a mile and a half, and an elevation of 2,375 feet. It lies, in the main, nearly east and west, but is slightly sinuous, and shows a decided tendency to narrow at its western end. It resembles the valley of an ancient river which, from change in relative elevation of its lower end or blocking of its outflow in some other way, had been converted into a lake. The two sides maintain a remarkable parallelism, following each other in their flexures so as to preserve the width of the lake nearly uniform, but there is a marked departure from the appearance usually seen in river valleys in one respect. The wider reaches of the valley appear rather to lie in the mountainous parts of its length than in those comparatively flat and low.

"A very considerable area of the low, undulating country near Francois Lake lies beneath the three thousand-foot contour line, a great part of it having, perhaps, a mean altitude of 2,500 feet. If severe summer frosts do not occur, this region should be useful agriculturally, and, judging

from the flora alone, I think there can be little doubt that most of it would be suited at least to the growth of barley, oats and the hardier root crops. The soil is very fertile, and the country in general, like that about Fraser Lake, well suited to the support of stock. The area of the lower undulating and level country in the neighbourhood of Francais Lake may be estimated, very roughly, at about 200 square miles."

THE NECHACO VALLEY

The Nechaco Valley is one of the most easily reached districts covered by this Bulletin. With Ashcroft as the starting point, the following shows approximately distances to be travelled:—

Ashcroft to Quesnel, by stage.....	.....	.....	220 miles.
Quesnel to Blackwater, by Telegraph Trail.....	.....	.....	40 "
Blackwater to Nechaco (Tsinkut) Trail.....	.....	.....	55 "
			315

During the season of navigation a steamer runs between Soda Creek and Fort George.

All available reports go to show that this district is one of the most greatly favoured by nature in the whole of the Province. While the Endako and Bulkley Valleys are more suitable for stock-raising, the Nechaco, with its level valleys and rich white silts offers special inducements to farmers. Transportation facilities are at present very meagre, but it is probable that the Grand Trunk Pacific Railway will eventually pass through it. It will then become one of our most valuable agricultural districts. Its advantages are many; the land is level; the soil is rich and to a great extent open; the climate is milder; the principal crops can be grown without trouble, and the general altitude is much lower than that of the surrounding country.

Mr. A. L. Poudrier, D.L.S., who investigated the district for the Provincial Government, reports in the following terms:—

"Before giving a detailed description of the ground surveyed, it may be better to give a general account of the whole valley. The Nechaco River takes its source near the foot-hills of the Coast Range, south of the 53rd degree of

north latitude, and near the head of the Salmon River, which falls into Dean's Channel; it runs north-easterly for a long distance, receiving many large feeders, until it falls into a large trough or depression, near Fraser Lake. This depression follows the 54th degree of latitude in its general direction, and it has an average width of from ten to forty miles. At the point where the Nechaco reaches this wide valley its volume is largely increased by the Nantley River, which drains Fraser Lake, Lac des Francais and the valley of the Endako, and it takes its course, winding through the valley, but keeping a general course, parallel to the 54th parallel of north latitude, until it reaches the Fraser River. This large extent of land is drained by the Lower Nechaco from Fraser Lake to the Fraser River, and has a length of about 75 miles in a direct distance, and a width of from ten to forty miles.

"Although the ground is generally covered with thickets of small trees, patches of prairie of large extent often occur. These are always level and covered with the greatest varieties of nutritious grasses. These prairies appear to be nearly all caused by fires. They are more abundant near the trails and rivers, where no doubt fires were started by Indians or white men camping. On the north of the Nechaco very large tracts of land have been burned, and are now fast becoming rich meadows; only a few stumps and the remains of burned logs can be found. The whole country could be cleared most effectually and cheaply by that means. The soil almost everywhere is of the richest quality. It is composed of fine white silt with clay subsoil; in some parts the silt attains a thickness of over 40 feet. Not only is the grass very luxuriant on the prairies, but even in the wooded portion pea-vines and vetches of different species grow to such a height that it renders travelling very difficult.

"It has long been the opinion of miners who have seen that country that summer frosts would prove to be too severe for the cultivation of the soil. A very careful examination of the flora, and additional information received from the Hudson's Bay Company employees and others, enable me to form a different opinion. Barley, oats and all kinds of common vegetables have been grown success-

fully at Fort Fraser, and further north and in a higher altitude. At Fort St. James cultivation is also very successfully carried on. The Indians grow potatoes, turnips and cabbages, and although their mode of culture is most primitive, they always have a good yield. A great portion of the provinces of Quebec and New Brunswick were subject to summer frosts when they were first settled, so much so that no crops could be raised for many years until the clearing had reached a very large area. Should some parts of the Necho Valley be so exposed, no doubt the clearing or burning would have the same beneficial effect.

"I have seen in many places heads of wheat, probably brought amongst other grain by pack trains, thoroughly ripe; and timothy and clover are also found in many places along the trails. I have no doubt that an early wheat, like Ladoga, or Red Fife, could be successfully grown, at least over the largest part of the valley.

"According to Professor Macoun, the flora resembles very much that of Belleville, Ont. I would compare the climate to that in the vicinity of Quebec, without the heavy snowfall. According to all information and signs, the snow does not appear to attain a greater depth than fifteen inches in the lower part of the valley; it may be somewhat more near Lac des Francais.

"The rain is not abundant in summer, but quite sufficient to enable farming to be done without irrigation. The cold is said to be very severe in winter, but the atmosphere is always clear and calm. The summer is very hot, and with the long days in that latitude there is all the chance possible for vegetation. In certain portions of the surveyed ground the timber is too small for construction, but a good supply of fair timber can always be had cheaply from along the river or from the shores of the lakes.

Fish and Game .

"During the latter part of August and the month of September the Necho abounds with salmon, which make their way from the sea to their spawning grounds, and are at this time taken in thousands by the Indians, who dry

them for their winter supply of food. Trout and sturgeon are also numerous, and a small fish that the Indians call whitefish, though it has no resemblance to the whitefish of the North-West Territories. Deer are not numerous in the summer season, although numbers of tracks were seen. Bear are very plentiful, and are caught by the Indians with snares set in the same manner as a rabbit snare. Coyotes are plentiful and, as a rule, make the night hideous by their howling, until one gets used to them. Rabbits are there in abundance, and, with fish, make up the chief articles of food the Indians have to depend upon.

"The fur-bearing animals, though not so plentiful now as in the past, are still numerous, and are composed of beaver, otter, fisher, lynx, marten, wolverine, fox and muskrat. During the fall and until late in the season, the lakes and rivers teem with ducks and geese of all kinds, and are easily got at, as one finds plenty of cover all along the shore line.

Roots and Cereals

"The Indians in the Necho District raise potatoes of a very good quality, turnips, cabbage and onions, while at Fort Fraser the Hudson's Bay Company raise very fine samples of each of the above-mentioned. When on a visit to Fort Fraser I saw a stack of oats, all of which were in splendid condition and had not the least appearance of having been touched by frost.

Climate

"The climate is all that could be wished for, no extremes; the days during the summer months, though hot, are never uncomfortably so, whilst the nights are generally so cool that a blanket is acceptable. During the winter, I ascertained from the Indians, the snowfall is light, and although sometimes the glass drops very low, as a rule the weather is not very severe. They informed me that they never thought of feeding their cattle until about Christmas, and that in March they could be, as a general rule, turned out again.

"Now and then during the season light summer frosts occur, but, owing to the warm nature of the soil, they seem to do little damage; and I have no doubt that as the country becomes opened up and the soil turned over, these frosts will entirely disappear."

In confirmation of this report, the following by Dr. G. M. Dawson may be quoted:—

"In previous reports I have described the flat country of the Lower Nechaco basin as constituting the greatest connected region susceptible of cultivation in the Province of British Columbia. Its area has been estimated at 1,000 square miles. It is based on fine, white, silty deposits of the later portion of the glacial period, constituting a soil almost uniformly fertile, and is remote from high, snow-clad ranges. In the absence of further information, I can merely repeat what was said of this region on a former occasion, viz.:— That while it is not probable that wheat can be grown over all parts of this area, it can scarcely be doubted that barley may be ripened almost everywhere in it, while wheat would succeed in chosen spots."

CHILCOTIN, BLACKWATER AND FORT GEORGE

Synopsis of Reports by Dr. G. M. Dawson and Mr. H. P. Bell

The most reliable sources of information regarding these districts are the reports made by the above gentlemen. The first-named conducted the exploratory surveys from Yellow Head Pass westward for the Canadian Pacific Railway and the latter made a report for the Provincial Government in 1865, in connection with the proposed British Pacific Railway.

Routes In

The Cariboo Waggon Road is probably the best starting point for all three districts, as regular stages run to Quesnel, although entrance to Chilcotin and the Blackwater can be made from the Coast at Bella Coola. Approximately the distances are as follows:—

Bella Coola to Chilcotin River, via Lieut. Palmer's trail.....	130 miles.
Bella Coola to Blackwater, via trails along Takia, Uhlgako and Euchi- mko Rivers	180 "
Meldrum's to Chilcotin River, waggon road to Alexis Creek and thence by trail..	70 "
Alexandria to Chilcotin River, via Lieut. Palmer's trail.....	55 "
Quesnel to Fort George by canoe up Fraser River.....	70 "

THE CHILCOTIN VALLEY

Leaving the Cariboo Waggon Road at Meldrum's, an improvement at once is noticeable. Between that point and Chilcotin, a settlement at the mouth of Riske Creek, it broadens into a wide plateau of park-like aspect. Belts of timber alternate with open prairie covered with luxuriant grass. The flora is very similar to that of the fertile eastern slope of the Rocky Mountains. There is a rapid descent to a lower bench of the old Riske farm. Although at an altitude of 2,400 feet, fine crops are produced by irrigation, and the lower terraces appear both warmer and drier than the plateau above. From Chilcotin in a south-westerly direction there is a large stretch of open prairie, covered with bunch-grass and forming a fine stock-raising country. The highest part of the plateau is about nine miles from Riske Creek, and there is then a gradual slope toward the valley of the Chilcotin River. Beyond this valley, and rising gently as it recedes, the same plain stretches for many miles, diversified prairie and woodland. After following along the plateau parallel with the valley for some seven miles, the trail descends to the valley bottom. From this place to Alexis Creek, fifteen miles, the valley is wide, with much level land on terraces a short distance above the river. It is estimated there are about 7,000 acres of cultivable land in this part of the valley.

As some parts of this district have been settled for many years, a good idea can be had of conditions. In the valleys and river benches most ordinary crops are grown, while fruit and all garden crops succeed in favourable locations. The elevated plateaux are, however, only used for stock-raising.

THE BLACKWATER COUNTRY

That part of the Blackwater Valley lying to the north of Kluskus Lake contains abundance of good grazing

ground that cannot be covered by winter snows, as the local Indians leave their horses out at all seasons. The north slope is generally lightly tree-clad, the undergrowth consisting of bunch-grass, vetch and strawberry, while the south bank is much more heavily timbered with scrub pine and poplar and occasional groves of black spruce. From Kluskus Lake to its junction with the Nazco, the Blackwater flows through a series of lakes, along which are found large stretches of good land. The surface slopes gently to the water and is dotted with groves of aspen and spruce, where not covered with luxuriant grass.

After its junction with the Nazco, the valley of the Blackwater is wide and flat-bottomed for a distance of ten miles. The country is generally well timbered, but there are occasionally grassy meadows. The river then runs westward through a range of high hills which are not known to be of any value. On descending to the plain, the growth of timber greatly improves and groves of large Douglas fir occur frequently. The surface is undulating, with large alders growing in the moist hollows. As it is 300 feet below the general level of the country and of great size, it may be of agricultural value, but there is a heavy growth of timber that will require clearing.

Another range of hills is met with after this plain has continued for some six miles and, from that point to the junction with the Fraser, the valley is contracted into a canyon with rocky sides, apparently of no use agriculturally.

AROUND FORT GEORGE

There is an area of two or three thousand acres surrounding Fort George that is suitable for agricultural purposes. Dr. Dawson states that such crops as have been tried succeed well, and the elevation is only about thirty feet above the Fraser. Wheat and grain of all sorts can be grown successfully, as well as large potatoes of fine quality. He notes that potato stalks, with the exception of the lower leaves, were destroyed by frost on October 10th.

The lower part of the valley of Chilaco (Mud) River,

that flows into the Fraser at Fort George, is wide and flat-bottomed, averaging about a mile in width. It forms a deep depression in the generally level surface. There are a good many stretches of open, grassy land, heavily timbered with tall grass, but generally the valley is heavily timbered. These flats appear as if occasionally flooded, but the soil is very fertile. Among the timber found were many large trees. Douglas fir and Englemann's spruce sometimes reached a diameter of three feet, while cottonwood was found with a girth of five. In the vicinity of Double-Headed Mountain the valley is more contracted, probably not more than half a mile wide.

CEREAL AND ROOT CROPS

"At Quesnel grain crops are sown from April 20th to the 1st of May; potatoes planted somewhat later. The grain is harvested about the middle of August. Wheat, barley and oats are cultivated, and all succeed well, though the two last are the most profitable, as they can be sold in Cariboo without milling. Night frosts happen here occasionally in June, but are not usually severe enough to do damage to potatoes, though sometimes checking them a little. On one occasion, potatoes are known to have been so completely frozen down as to prove a failure. The Hudson's Bay Company formerly cultivated a farm at Alexandria, between Quesnel and Soda Creek, on which, on certain portions of the land, 40 bushels of wheat to the acre, by careful measurement, were grown.

"At Fort George (near latitude 54 degrees) the season of growth for crops does not differ materially from that of Quesnel, and grain of all kinds may be ripened. The elevation here is 1,880 feet. Winter is said to set in about the 1st of November, though steady cold weather may not continue from that date. In December and January there is often a few days' thaw. In March the snow thaws in the sun every day, the thermometer falling below the freezing point at night. In April the snow disappears, and by about the 20th of the month the ground is fit to work. At Fraser Lake (2,225 feet) potatoes and other root crops are grown near the Hudson's Bay establishment, and barley and wheat

were formerly cultivated, though it is now found cheaper to import flour. The Indians have little garden patches, with potatoes, turnips, etc. At Stuart Lake (2,200 feet), near Fort St. James, garden vegetables and root crops succeed admirably, and potatoes and barley are grown in considerable quantity. I do not know whether wheat has been tried, but, with proper care, it would no doubt succeed in most seasons, if not invariably.

"In all these places the complaint of summer frosts is made. These usually happen in June, and may occur on one night only, or on two or three nights, and are often severe enough to touch potato tops, and occasionally to harm the plants considerably. It is said, however, that these frosts have only occurred of late years, and that formerly they were unknown. It hardly seems probable that any great change in climate is taking place, and it is quite possible that the necessity for farming having to a great measure been done away with, sufficient care has not been given to cultivation, or to the renewal of the seed, which is apt gradually to deteriorate and lose the vigour necessary for successful growth in northern latitudes. Nor are the most judicious localities always chosen for the more delicate crops, the lowest ground or that nearest the fort being often selected, while higher slopes may be less exposed to frosts. It is not probable that wheat will grow over the whole area of the white silt deposits of this region; but I think barley would flourish over nearly the entire area, while wheat may be successfully raised in chosen spots. The quality of the grain seen at Fort Fraser was excellent."—Dr. Dawson's Report.

NORTH OF FORT GEORGE

Mr. J. W. Moxley, who has resided for three years at a point 250 miles northward from Fort George, says the climate is not at all severe, there being a very light snow-fall. Vegetables do remarkably well, and the country has undoubtedly a future as a great wheat-producing area, as Mr. Moxley saw a sheaf of wheat standing over five feet in height. The climate is quite as mild as obtains at Quesnel. In mid-February, 1906, in the district surrounding the head-waters of the Fraser the snow was all gone.

As to the mineral richness of the country, owing to the fact that little systematic prospecting has been done, not much is known at present. There are, however, great deposits of mica, and gold is found in all the streams, although, of course, not always in paying quantities.

Mr. Moxley says the district is a sportsman's paradise, the lakes abounding with trout of the finest variety and the woods with small game of all kinds. Moose are very plentiful, although some means should be taken by the Government to stop the Indians killing them for the sake of their hides. He mentions that he has personal knowledge of two families of Cree Indians killing eleven moose in one season, merely for their hides, although, of course, a certain quantity of the flesh would be utilized.

PEACE RIVER

UNDER an agreement, made several years ago, between the Government of the Dominion of Canada and the Government of the Province of British Columbia, the Province ceded to the Dominion three and one-half million (3,500,000) acres of land in the Peace River Valley for railway purposes. That portion of the Peace River Valley, and the portion included in the Province of Alberta, is administered by the Department of the Interior, Ottawa, and information regarding it may be obtained on application to the Deputy Minister of the Interior at Ottawa.

A block of land 40 miles in width and approximately 170 miles in length, containing about 4,500,000 acres, commencing at the intersection of the western boundary of the block of land selected by the Dominion Government with the Peace River; thence following the Peace and Parson Rivers to the confluence of the Pack River, and thence following the Pack River to the point where the Pack River leaves McLeod Lake, and extending for a distance of 20 miles on either side of said rivers throughout said distance.

is reserved by the Government of British Columbia from sale, lease, license or other disposition under the Land Act, excepting by pre-emption under the said Act.

REPORT BY WM. FLEET ROBERTSON,

PROVINCIAL MINERALOGIST

Under instructions from the Hon. the Minister of Mines, the Provincial Mineralogist, during the summer of 1906, made a trip to, and an examination of, that portion of British Columbia lying east of the Rocky Mountains, but to the west of the 120th Meridian of west longitude, and known as the Peace River Valley District of British Columbia. As this portion of the Province is at present most remote from transportation facilities of any sort, the time occupied in reaching it from Victoria was greater than was required to make the examination of the district.

A route was selected embracing a stretch of British Columbia of which little authentic information was available and about which such was desired.

This report must necessarily partake largely of a description of the country along the route travelled or adjacent thereto, but, since the line of travel was "crossing the formations," both physical and geological, the features noted will, in all probability, be found to extend a certain distance north and south of the section traversed.

The route taken on this trip was parallel to, but a little farther north than, that travelled over in 1905 across the Northern Interior Plateau, and the description of the major physical features contained in the Report of 1905 are applicable to this more northerly route.

The party consisted of the Provincial Mineralogist, with Mr. Harold Nation as an assistant, and, for part of the time only, a cook.

A general description of the route taken is as follows:— From Victoria and Vancouver to Essington, at the mouth of the Skeena River, by Canadian Pacific Railway Co.'s steamer, a distance of 645 miles. From Essington up the

Skeena River to Hazelton by Hudson's Bay Co.'s steamer, a distance of 180 miles. From Hazelton to Babine Lake by pack-train, 70 miles. From Babine, up Babine Lake by canoe, across a portage of 12 miles to Stuart Lake by waggon road, and, again by canoe, down Stuart Lake to Fort St. James, at the outlet, a total distance of 150 miles. From Fort St. James to McLeod Lake by pack-train, a distance of 85 miles.

McLeod Lake is on the headwaters of the Peace River, and here canoes were taken to the head of the canyon of the Peace, a distance of 182 miles, where the canoes had to be abandoned and a portage of 14 miles made around the canyon to Hudson Hope, the party packing all its supplies and camp outfit across the portage.

From Hudson Hope to Fort St. John, on the Peace River, is a distance of 60 miles by the River, which it was expected would have to be made on a raft, but, being so fortunate as to encounter an Indian with horses, a side trip was made to Moberly Lake and the Pine River District to the south, arriving at Fort St. John overland, after a trip by pack-train of some 90 miles.

From Fort St. John another trip by pack-train was made to the south, to the Peace Coupe Prairie, returning to Fort St. John after travelling by pack-train some 185 miles.

A short trip was also made from this point to the north, on foot, as no horses could be obtained on the north side of the river.

At Fort St. John a bateau was obtained from the Hudson's Bay Company, and the party, here reduced to two, floated down stream to Peace River Crossing, at the junction of the Smoky with the Peace River, a distance of 180 miles, crossing the Provincial Boundary into Alberta some 45 miles below Fort St. John.

From Peace River Crossing the party went by a freight waggon to the upper end of Lesser Slave Lake, a distance of 100 miles, travelling from that point in a Peterboro' canoe, kindly loaned by the Royal North-West Mounted Police, down Lesser Slave Lake and River and the Athabasca River to Athabasca Landing, a distance estimated at

200 miles, from which point to Edmonton is 100 miles by a good waggon road.

At Edmonton railway facilities were again obtainable, and the party proceeded by the Canadian Pacific Railway to Victoria.

The distance travelled was estimated at approximately, 3,120 miles, divided as follows:—By steamer, 910 miles; by pack-train or on foot, 470 miles; by canoe or bateau, 700 miles; by waggon, 200 miles; and by railway, 840 miles. These distances and the modes of travelling are set forth in tabular form in the following table:—

TABLE OF DISTANCES TRAVELED, SUMMER OF 1906

	Steamer	Railway	Pack-train or on foot	Waggon	Canoe
From Victoria to Vancouver	85	...	...	...	...
From Vancouver to Essington..... . . .	560	...	...	...	...
From Essington to Hazelton..... . . .	180	...	...	...	...
From Hazelton to Babine Post..... . . .	...	....	70	...	...
On Babine Lake.. . . . .	...	....	...	...	105
Portage..... . . . .	...	....	12	...	...
Stuart Lake..... . . . .	...	....	...	...	33
From Fort St. James to McLeod Lake .. . . .	...	....	85	...	...
Pack River..... . . . .	...	....	...	...	20
Parsnip River .... . . . .	...	....	...	...	72
From Head of Peace to Cust House.. . . .	...	....	...	...	90
From Cust House to Hudson Hope... . . .	...	....	14	...	...
From Hudson Hope to St. John via					
Moberly Lake..... . . . .	...	....	90	...	...
From St. John to Pouce Coupé and return					
North of River “..... . . . .	...	....	14	...	...
Peace River Crossing..... . . . .	...	....	...	...	180
From Peace River Crossing to Lesser					
Slave Lake..... . . . .	...	....	...	100	...
On Slave Lake. .... . . . .	...	...	...	...	200
On Slave Lake River. .... . . . .	...	...	...	...
On Athabaska River..... . . . .	...	...	...	...
From Athabaska Landing to Edmonton .. . . .	...	....	...	100	...
From Edmonton to Calgary..... . . . .	...	195	...	...	...
From Calgary to Vancouver..... . . . .	...	645	...	...	...
From Vancouver to Victoria.....	85	....	...	...	...
	910	840	470	200	700

Making a grand total of 3,120 miles.

The time occupied between transportation points, viz., Hazelton and Edmonton, was 77 days, including Sundays,

in which time 58 camps, or moves, were made. The route taken, while seemingly longer than necessary to reach and return from the district inspected, proved that "the longest way around is sometimes the shortest way home," as it was almost entirely down stream on the waterways, in which direction 40 miles a day could be covered with little labour or expense; whereas, going up stream, only about 10 miles a day could have been made, and three or four Indians would have been required to "track" the canoes up stream.

SUMMARY

A detailed description of the country passed through is given later on in this report, in diary form, but the following is a summary of the same:—

Mineral Possibilities

The Babine range of mountains, over which the trail from Hazelton to Babine leads, rises to heights of 7,000 feet in the peaks, and its rock formation consists of schists, quartzites, shales, etc., cut by numerous porphyritic dikes. This range is practically the length of Babine Lake, forming its southern shore and watershed, dying out both to the east and west of the lake. The range has only begun to be prospected, and its potentialities are as yet undemonstrated; but, at the same time, there have been a number of claims staked there, as yet quite undeveloped, which produce at least samples of copper, silver and gold ores that indicate possibilities and lead to the hope of greater things in the future.

On the north side of Babine Lake the country is so covered with recent superficial deposits, of glacial age, that few exposures of solid formation occur to tempt the investigation of the prospector, particularly as the adjacent formations to the south have not as yet been proven.

To the south of Stuart Lake there is a range of rocky hills which does not attain to the dignity of being called a mountain range, in which there are exposures of solid formation, chiefly sedimentaries of Palaeozoic age, more or less disturbed, but which, as far as could be observed, have not been cut by the igneous dikes which elsewhere appear

in some way to have been, if not the cause of, at least formed at the time when the mineralisation took place, and which dikes form, to the prospector, the visible sign of a possible mineralisation.

On the north side of Stuart Lake, until within a few miles of its eastern end, the country is covered with glacial deposits, and, from a mineral view-point, is unpromising, and from this district we have no record of even placer gold indications ever having been discovered.

Within a few miles of the eastern end of the lake a great knob of the underlying limestone protrudes, from which there are probably exposures of the same rock extending to the north-west, but this point was not investigated. The borders of this limestone area may prove worthy of investigation by the prospector, but the apparent absence of any serious igneous action is here also against the chances of its proving a profitable field. Such igneous action may be found to have occurred farther to the north and have as yet escaped notice, since the lake provides such an easy line of travel as to have left the adjacent country practically untravelled, save by the local Indians.

The line of the trail from Fort St. James to McLeod Lake is uninteresting in a mineral sense, as it is covered deep in gravel, clay, etc., and the few exposures of rock seen were mostly unpromising sedimentaries.

The course down the Pack and Parsnip Rivers was through similar country and lay at the base of the western foot-hills of the Rockies, a range which, as we know it in the more southerly part of the Province, where the glacial formation and conditions are very similar, has not, as yet, proved productive of mineral wealth, although a few prospects have been located therein.

The Peace River, formed by the confluence of the Parsnip and Finlay Rivers, derives from the latter tributary, wash from the north-west, from the vicinity of Manson Creek, a district in which placer gold has been already found in various localities and in considerable quantities. Consequently, as might be expected, the bed of the Peace River shows black sand and indications of placer gold

throughout its explored length, some of the bars giving "colours" quite sufficient to offer inducements to prospect for dredging or steam-shovel ground, but, so far as is known, at no place have the bars contained a sufficient proportion of gold to be profitably worked by what has been called "individual" methods.

Unlike most of the streams in the southern part of the Province on which dredging has so far been attempted, the bars on the Peace River are found to be free from boulders of any material size, a fact which should greatly favour dredging operations and render possible the working of a deposit of a grade which might not be profitable where such conditions did not exist. These remarks apply not only to the bed of the present river, but also, to a certain extent, to the banks of the river, which were at one time the bars in the greater valley of the ancient river into which the present river has cut. It was in banks of this description, some miles below Fort St. John, that small quantities of gold were found in 1905, which led to the staking of numerous claims and the rather sensational newspaper articles about them attributed to members of the Dominion Government Peace River Exploration party.

COAL

So far as is known, there have been no indications of coal found in the section of country passed through between Hazelton and the head of the Peace River, although there is a possibility that lignite, at least, may be found under some of the glacial drift to the north of Babine and Stuart Lakes. It seems unlikely that the western slope and foot-hills of the Rockies will be found to be coal-bearing, as, at this latitude, the coal measures appear to be almost exclusively on the eastern slope of these mountains.

On passing down the Peace River through the main range the foot-hills are reached, where rocks of the coal-bearing formation are seen and continue to below the Canyon, some 75 miles to the east, in which extensive region it is possible that, in the future, coal may be developed at many points.

Up to the present time the whole district to the east of the mountains has been under Government Reserve, so that no coal or other land might be staked or recorded there, which fact has prevented the district from being prospected or settled. A few prospectors, either in ignorance or in disregard of the reserve, located and staked coal lands in the vicinity of the Canyon, but as a record of these claims was refused by the Provincial Government, the prospectors and those interested are extremely reticent as to their finds, hoping to re-stake as soon as the reserve is opened, and it is felt that it is but right that the location of their discoveries be not made public. The coal found appears to be bituminous coal of very fair quality, in beds of workable thickness.

Some distance east of the Canyon and south of the Peace River, on Coal Creek, a tributary of the South Pine, and on the headwaters of Muddy River and other streams of that vicinity, coal has been reported as found; the latest mention of such being by Mr. J. A. Macdonnell, in the report of his explorations of the district for the Dominion Government, in which he mentions finding a good bituminous coal.

The writer, who followed his trail through the district for a considerable distance, found lignite, but was unable to see any bituminous coal, which, it is expected, would be found to be confined to the district more closely bordering on the main mountain range. It is thought that, as soon as railway transportation through the district becomes an established fact, a number of workable deposits of coal will be developed, but under the present conditions any such deposit would be without value.

TIMBER

Of timber, such as is called timber on the Coast, there is none in the district travelled through. Such timber as there is, is spruce, hemlock, balsam and jack pine, the best of it ranging from 12 to 24 inches in diameter, and not tall for that diameter, with numerous knots, etc. Timber line in the Interior, at this latitude, may be placed at, approximately, 4,000 feet above sea level, although a few scrub trees and bushes range higher. Timber which would be even

locally merchantable for lumber is scarce, the repeated forest fires having pretty thoroughly cleared out the greater portion of it, leaving only a few isolated patches of the older trees, while the subsequent growth has not as yet reached a size to make it of value for this purpose. Of these patches, probably the best is to the south of Babine Lake, towards its south-eastern end, where there is a very fair body of spruce timber. There is a very limited area of fir on Stuart Lake, near the portage, and a few isolated patches of spruce at intervals along the south shore of the lake. There is an area of very fair spruce to the east of McLeod Lake, but along the Parsnip River there is no timber fit for lumber, with the exception of isolated spruce trees and large cottonwoods, which may be utilised and now serve for making the dugout canoes used in the district. These latter trees grow very plentifully and sometimes very large on the river bottoms of the streams of the northern watershed.

To the east of the mountains, on the upper benches, there is little or no timber, as a rule, the whole country having been burned over. There are, however, on the trail to the Pouce Coupe, a couple of small areas which escaped the general conflagration, and are correspondingly the more valuable.

A few tamarack (*Larix Americana*) trees were seen east of the mountains, but that such do not grow west of the mountains here may be inferred by the fact that the Indians from Stuart Lake had never seen and did not know the tree.

AGRICULTURAL LANDS

In the district passed through there are, to the west of the Rockies, no large blocks of land suitable for agriculture or even grazing, although there are a number of strips of such land, some of them of considerable area.

On the south shore of Babine Lake, near its outlet, there is a small area of good land, but the remainder of this south shore did not appear promising, good land only being found around the mouths of the few creeks. On the north shore of the lake there is a quantity of very good land. There is a strip of this land extending almost continuously from the outlet up the lake for some 40 miles, and extending from

the shore at least a mile back. The greater part of this area is open, free from trees, clear, and supports a magnificent crop of wild hay, which in July was being mowed by the Indians for winter horse and cattle feed, the stock in summer finding good grazing on the higher land, further back from the lake. This was one of the finest strips of land seen on the trip. The soil is a clayey loam; the slope from the lake is gradual, with a southern exposure, and would support grain of all sorts, as well as vegetables.

The district is at present remote from transportation, but the lake is eminently suited for navigation, with a low valley opening from its south-eastern end towards Fraser Lake, through which a road could be easily built, and it seems probable that connection will thus be made with the main line of the Grand Trunk Pacific Railway, soon after that road is built.

In this valley just mentioned there is good agricultural land extending up the valley for miles, but not exceeding in width one or two miles.

To the south of both Babine and Stuart Lakes the hills rise from the water's edge, and, except in a few instances around the mouths of creeks, there is no land suitable for agriculture. At the east end of Stuart Lake there is a considerable area of fine land to the south-east, which was fully described in the Report of 1905.

The trail from Stuart Lake to McLeod Lake passes along the height of land separating three drainage areas, and the greater part of the land in this section consists of gravel benches, barely supporting a scanty growth of jack pine. There are, however, a few patches of land in bottoms which is very fair, and a few good hay meadows, but these are too isolated to be of any general importance. These conditions prevail all the way down the Pack and Parsnip Rivers to the Peace River.

In passing down the Peace River, the mountains occupy the land for some distance, followed by the foot-hills as far as the Canyon, and it does not seem to offer any inducement to the agriculturist. Possibly, when the country is more developed, a few valleys in the foot-hills, of very limited area, may eventually prove of use.

From the Canyon east to the boundary of the Province a considerable proportion of this great area, as far as the soil, etc., is concerned, is quite suitable for cultivation, being rolling prairie bench land, some 800 to 1,000 feet higher than the Peace River, and requiring little or no clearing, such tree growth as there is being small poplar and willow. The stream courses are cut down into this bench land to such an extent as to preclude all possibility of irrigation for the greater part of the district, but from observation in a dry season and from information picked up, it would seem that the summer rainfall and dews are quite sufficient for ordinary crops, while the streams and numerous small lakes provide all the water needed for stock.

Of this large area of land, which will some day be utilised for farming, the choicest parts seen were at the Pouce Coupe Prairie and around the ends of Moberly Lake, the former about 40 miles long by 25 miles wide, a solid block of fine rolling prairie, clear of trees and covered with grass suitable for hay, well watered and with splendid soil, the analysis of which is given in the detailed report. This is probably the largest solid block of farming land in British Columbia.

AGRICULTURAL POSSIBILITIES

In the whole of the district passed through there are no settlers or settlements, except the isolated posts of the Hudson's Bay Co., which are primarily fur-trading posts. Cultivation of the soil being a question of inclination of the Factor, there have been few attempts at cultivation from which to draw definite conclusions as to the agricultural possibilities of the region. At Babine Post the ordinary root crops and summer vegetables are grown without difficulty, although occasionally summer frosts trouble the potatoes. Hay and other wild grasses grow so prolifically that it is considered there would be no difficulty experienced with barley, rye, oats, wheat, etc. The summers are reported to be warmer than at Stuart Lake, with a greater summer rainfall and heavier snowfall, together with a winter season averaging two weeks longer than at Stuart Lake, and probably a lower winter temperature. At Stuart Lake, as noted in last

year's Report, all the garden vegetables and root crops have been grown successfully, as have the small fruits, such as raspberries, currants, strawberries, etc., both at the Hudson's Bay Co.'s post and at the R. C. Mission, a mile farther up the lake, at which latter point barley, rye and oats were seen growing and almost ripe, with fine full heads.

Owing to the difficulty in getting young trees into the district, no attempt has been made to grow fruits, such as apples, plums, etc., but it is not expected that there will be any difficulty in growing these fruit trees. The climate compares very favourably with that of the Province of Quebec, with which the writer is familiar, where fruit is grown equal in flavour to any produced in the Dominion.

At McLeod Lake summer vegetables and root crops have, for many years, been grown with success by the Hudson's Bay Factor, although the soil around the Post is very poor and requires artificial irrigation. The crop of wild hay here, where the soil was suitable, was good, and the berry crop plentiful and of good quality.

There is no permanent habitation on the Peace River between the Rocky Mountains and Fort St. John, but east of the mountains the vegetation was found to be luxuriant, and seemed to indicate a favourable climate. The wild berries were as good as anywhere in the Province, although not as plentiful. The size of the "apples" on the wild rose bushes was particularly noted, as being larger than seen anywhere else in British Columbia.

At Fort St. John the Hudson's Bay Co.'s Factor grows vegetables, etc., but has never attempted anything further. In 1906 the potato crop at the Post was very poor, owing to the unusual dryness of the season.

South of Fort St. John, in the Pouce Coupe District, no cultivation has been attempted, but the growth of wild grasses and the general conditions seem to compare favourably with portions of Alberta seen later, and which successfully supported a fine crop of grain.

Around Dunvegan, on the Peace River, in Alberta, vegetables and grain of the usual sorts are grown on the lower benches, but it is reported that attempts to cultivate the

higher bench lands, some 600 to 800 feet higher than the river, have not been successful.

At Peace River Crossing, at the junction of the Smoky with the Peace River, the usual garden vegetables were seen growing in the latter part of September, while melons were reported to have been grown nearby, although these were not seen, but the writer ate ripe tomatoes, grown outside by Mrs. Anderson, whose husband, Sergeant Anderson, is in charge of the R.N.W. Mounted Police Barracks.

This point is more northerly than any part of the Peace River in British Columbia, and the climate is colder, yet at Vermilion, some 300 miles still farther to the north and down the Peace River, grain is reported to be grown to an extent to justify the existence of the three flour mills in operation there.

CLIMATE

It might be well to quote from Professor Macoun, Botanist of the Geological Survey, who visited this district in 1872 and 1875. Speaking of the district in the vicinity of Stuart Lake, he says:—

"There can be no doubt but that when the forest is cleared, by whatever cause, the soil will become drier, and the climate will be considerably ameliorated. Owing to the latitude, the sun's rays fall obliquely on the forest, and as a natural result there is little evaporation. As Germany was to the Romans, so is much of our North-West to us—a land of marsh and swamp and rigorous winter. Germany has been cleared of her forest and is now one of the finest and most progressive of European countries. May not the clearing of our north-western forests produce a similar result in the distant future of British Columbia?"

In the garden of the Hudson's Bay Company's post at McLeod Lake, he found in June, 1875, "among other vegetables, cabbage, cauliflower, turnips, peas and potatoes—the latter six inches high—growing luxuriantly and not at all injured by frost, although it had been very severe one night shortly before our arrival."

He writes of the vicinity of Hudson Hope:—"I have been extremely surprised at the rankness of the vegetation

around here, although there is very little rain at this season and there has been little all spring. Wild peas and vetches grow to an amazing height in the poplar woods, and form almost impenetrable thickets in many places. Vetches, roses, willow herb (fireweed), and grasses of the genera *poa*, *triticum* (bunch grass) and *bromus* fill the woods and cover the burnt ground, and surprise Canadians by their rankness and almost tropical luxuriance.

"Growth is extremely rapid, owing partly to the length of day and cloudless skies, supplemented by heavy dews, and possibly also to the great range of temperature during the twenty-four hours, from 45 degrees at sunrise to 80 degrees Fahrenheit at noon.

"At St. John (on the Peace River) a few minutes' observation tended to show that this point was much warmer than Hudson Hope, that the soil was richer and that the vegetation was in a far more advanced state. Raspberries and service berries were fully ripe and in great abundance. Potatoes, oats, barley, and many varieties of vegetables were in a very flourishing state in 'Nigger Dan's' garden. The oats stood fully five feet high, and the barley had made nearly equal growth.

"I started up the hill in rear of the Fort. We found the level of the country above the river valley to be about 700 feet.

"Clumps of willows and poplars, of various ages, were interspersed with the most astonishing growth of herbaceous plants I ever witnessed.

"Willow herb (fireweed), cow parsnip, *geum*, *triticum* (bunch-grass), *poa*, and a number of other tall-growing species, covered the whole region with a thick mass of vegetation that averaged from three to five feet.

"The soil must be exceedingly rich to support such a growth year after year.

"My observations all tend to show that, omitting the slopes on the left bank, the flora of this region is almost identical with that of Ontario.

"It would be folly to attempt to depict the appearance of the country, as it was so much beyond what I ever saw before that I dare hardly make use of truthful words to portray it.

"The country passed over in your own (Selwyn's) excursion, ten miles to the north-west, you report to bear a vegetation similarly luxuriant, more so than about Edmonton, or anywhere in the Saskatchewan Country. Rainy River and the Lesser Slave Lake marshes are the only regions known to me that are in any way comparable to it.

"The latter, however, is swamp, while this is a plateau, nearly level, and in parts over 700 feet above the river."

Dr. G. M. Dawson, in the Geological Survey report of 1879, writes of this district as follows:—

CLIMATE AND AGRICULTURE

"With regard to the climate of the Peace River country, we are without such accurate information as might be obtained from a careful meteorological record, embracing even a single year, and its character can, at present, be ascertained merely from notes and observations of a general character, and the appearance of the natural vegetation.

"It may be stated at once that the ascertained facts leave no doubt on the subject of the sufficient length and warmth of the season to ripen wheat, oats and barley, with all the ordinary root crops and vegetables, the only point which may admit of question being to what extent the occurrence of early frosts may interfere with growth. This remark is intended to apply to the whole district previously defined, including both the river valleys and the plateau.

WINTERING STOCK

"Horses almost invariably winter out well, without requiring to be fed. Hay should be provided for cattle, to ensure perfect safety, for a period of three or four months, though in some seasons it is necessary to feed the animals for a few weeks only. The Indians of the Cree settlement on Sturgeon Lake, previously referred to, winter their horses without any difficulty around the borders of a neighbouring lake, the shores of which are partly open. From Hudson Hope the horses are sent southward to Moberly Lake to winter, and, according to Mr. Selwyn, do well there. Lesser Slave Lake, with its wonderful natural meadows, has long been known as an excellent place for wintering stock, and is referred to as such by Sir J. Richardson."

MR. VALLEAU'S REPORT

Mr. F. W. Valleau, D.L.S., who lived in the Peace River Valley for many years, writes as follows:—

"The drainage area of the Peace River in British Columbia extends from the height of land at Giscombe Portage, on the Fraser River, to the south to the height of land at the headwaters of the Hay River to the north, and from the eastern boundary of the Province west to the headwaters of the Omineca, embracing thousands of square miles of territory, most of it unexplored even by the prospector or trapper. The district is well watered, having the following rivers taking their rise within the boundaries and all flowing into the mighty Peace:—The Parsnip, Findlay, Omineca, Oslinca, Ingineca, Ospeca, Pack, Pouce Coupe, Haldiay and Pine Nation, besides other smaller streams, upon many of which gold is to be found in paying quantities. Along the valleys of some of the above-named rivers is some magnificent agricultural land, notably along the Lower Peace, Parsnip and Omineca, and between the Parsnip River and Stuart Lake to the west. Although situated in the northeast corner of the Province, it would be a mistake to imagine that the climate of the Peace River District is unsuitable for agriculture or stock-raising, as, although the winters are cold, being very much like Alberta, in the North-West, it has this advantage, that being sheltered by the mountains there is little or no wind. The snowfall is only about half what it is in Cariboo, and the summers are delightful, warm, sunshiny days being the rule. In the valley of the Peace River itself (especially to the west of the Rockies) there is not a great deal of land suitable for agriculture, as for the most part the mountains come down close to the shores and in some places the river flows through an immense gorge whose perpendicular walls of rock tower thousands of feet without the slightest vestige of vegetation, and which for grandeur of scenery cannot be surpassed anywhere in Canada.

TERRACED VALLEYS

"But to the east of the Rocky Mountain Canyon the mountains become less precipitous, and the valley opens out

into broad benches or terraces, in some places heavily wooded and in others park-like and open prairie; the soil is of the best quality, being a rich deep loam. Native grasses, vetches and pea-vine grow fully four feet in height, and wild flowers of all colours are to be seen everywhere. The timber is pine, spruce, birch (which grows to an immense size), cottonwood and the other smaller growths of wood common to British Columbia, while along the rivers wild fruits, such as cherries, service berries, saskatoons, raspberries, strawberries, wild currants and gooseberries, grow luxuriantly. Back of these benches to the north of the river the hills are grass-covered, affording unlimited range for thousands of head of cattle and horses. The Indians about Fort St. John winter their horses out without putting up any hay, and they come through in fine condition.

"The Peace River proper commences at the confluence of the Findlay and Parsnip Rivers, the first-named coming in from the north and the latter from the south. Both are large rivers draining an immense stretch of country. From the point where these two rivers meet the Peace flows almost directly eastward. Five miles down the Findlay Rapids occur, the river tumbling over a ledge of large boulders. The rapids are about 500 yards in length, and the fall in the distance is some 10 or 12 feet. At ordinary stages of the water these rapids can be run with canoes, by hugging the right bank very closely and swinging sharply around into a small bay at the foot to avoid a bad whirlpool. From here for about 30 miles the Peace has an even flow, when the Parle Pas Rapids are met. These are longer and heavier than the Findlay and can only be run on the left side, and even here it is exciting work, for the few minutes it takes from the time the canoe takes the first plunge until you are through the foaming eddies at the foot. Sixty miles from the mouth of the Parsnip the river plunges through the Rocky Mountain Canyon, which is from 15 to 20 miles in length, and has a fall of over 60 feet in that distance.

FULL OF WILD LIFE

"Just below the Halfway River on the Peace there is a beautiful stretch of open country, a perfectly level bench,

containing some thousands of acres of fine soil covered with native grasses, which reach higher than a man's waist. A few groves of timber are scattered over it, just sufficient to give it a park-like appearance. Thousands of tons of good hay could be put up here if needed, and the grass-covered hills to the north would afford unlimited range. Higher up near the lower end of the canyon, there are other benches containing good land, easily cleared. In fact, all along the river east of the mountains the land is suitable for agriculture. Good fishing is to be had at the mouth of any of the streams coming into the Peace, brook, rainbow and arctic trout, ling and whitefish being among those caught by me whenever I tried. Moose, caribou, deer, bear are all plentiful, and the Peace River District to-day is one of the best fur-bearing countries in Canada. Marten, mink, fox, otter, beaver and wolves are plentiful, and the pelts are of the best quality.

"The canyon is not on the average over 200 feet in width, and as the river is fully half a mile wide just before entering, some idea of the fearful rush of waters can be had. The water has worn the walls of rock to such an extent on both sides, that they hang over in places 40 to 50 feet, and at the foot of the canyon the river flows out whipped into a milky foam, and for miles below is still covered with froth. From here to Fort St. John, 60 miles, the river would be navigable for ordinary river steamers, and is a magnificent stream. Fort St. John, a Hudson's Bay Company post, built on the north shore of the river, is prettily situated on one of the many fine benches that occur east of the mountains along the Peace. Here oats, potatoes, and other garden vegetables are grown, and are as fine samples as can be seen anywhere. To the north of the Peace, in the vicinity of the Halfway River, large deposits of bituminous coal have been found, and from tests made, the coal has proved to be a very superior quality.

TIMBER AND COAL WEALTH

"The Parsnip River is a beautiful stream, easily navigated by canoe; in fact, a small stern-wheel steamer could run over 90 miles of its length. The valley is broad, the soil

a rich sandy loam, with a substratum of clay. Native grasses along the valley of the Parsnip grow very rank in the open stretches. The timber is spruce, birch and cottonwood, all growing dense, and of a large size. Coal is also found on the Parsnip in the vicinity of Pouce Coupe River, some of the seams reported as large as 20 feet. This is also bituminous, and of a good quality. The timber in this district must become very valuable as soon as communication is opened with the outside world, both for milling and pulping purposes, and the supply appears to be unlimited. If the Pine River Pass is chosen, the Grand Trunk Pacific will cross the waters of the Parsnip and open up a beautiful stretch of country between that river and Fort St. James, at the southern end of Stuart Lake. This portion of the district can best be described as an undulating, park-like country, dotted over with innumerable beautiful lakes and streams, all of which are teeming with fish, and this portion of the district is destined to become a paradise for sportsmen.

"There are thousands of acres of the very best land here, only awaiting the plow to become waving fields of grain. The Hudson's Bay officials at Fort St. James have for years grown all sorts of vegetables of the finest quality, and oats and barley haye always been a certain crop here. The Hudson's Bay Company's horses and cattle all do well."

CLIMATE

Regarding the climate of the Peace River District, Mr. Cambie, in his report of 1880, says:—

"Climate is a subject on which it is difficult to form correct conclusions from the experience of one season; and the summer of 1879 having been an exceptionally cold and wet one, renders it more than usually so. The following statement on the crops, etc., seen at the various Hudson's Bay Company's posts throws a little light on the matter:—

"At Fort St. James, July 5th-8th, we found most kinds of garden vegetables and barley, all looking well. On October 8th there was snow on the hills and adjacent country, but none near the shores of Stuart Lake. The people at the Fort were busy digging potatoes, other vegetables and

grain having been housed some time previously. A small herd of cattle and horses are kept here, hay for their sustenance during the winter being cut in some of the natural meadows.

"Fort Macleod, July 14th-16th.—Here we saw some sickly-looking potatoes, the vines of which had been frozen to the ground in June, a fine crop of peas and carrots, with a few miserable onions. The soil of the garden is light and probably had not been manured for a great many years. The latitude is only half a degree farther north than Fort St. James, and the elevation 300 feet less, which should nearly compensate for the difference in latitude, but the climate seems colder, more damp, and less suited for agriculture, owing, probably, to its closer proximity to the Rocky Mountains. On October 2nd all the vegetables were housed and three inches of wet snow lay on the ground.

"Hudson's Hope, July 27th-29th.—The soil in the garden is a good sandy loam, and onions were very fine; all other crops had been injured by a severe frost about May 15th; beans were killed, so were the potato vines, but they had started afresh. A little patch of wheat had been frozen, but had grown up again, and a few silk stalks were forming ears; carrots and cabbage looked well. It was said that the frost in May was confined to the valley, and did not extend to the plateau. Horses have wintered in the open air for many years, but in the winter of 1875-76 twenty out of a band of twenty-four perished on account of the deep snow. Returning there, September 14th-16th, we found that the potatoes had produced only a very poor crop, and the wheat had been again frozen, while the grain was in the milk stage, rendering it useless.

"Fort Dunvegan, August 1st-5th.—In the garden of the Fort were fine crops of wheat, barley, potatoes, beets, cucumbers and squash; while at the R. C. Mission, close by, there were fine potatoes, onions, carrots, and a luxuriant but very backward crop of wheat, a condition of things which Mr. Tessiar, the priest, explained to us had resulted from a long drought, causing the grain to lie on the ground without sprouting till some heavy rain occurred at the end of

May. From August 28th to September 5th the wheat of the Fort was cut, but the grain was not perfectly ripe; that at the Mission was injured by frost, and there was no hope of its ripening. Other crops had succeeded well.

"Lesser Slave Lake, August 20th.—In the garden of the Fort were peas, beans, turnips, carrots, potatoes and rhubarb, all looking well. And in the garden at the R. C. Mission were the same vegetables, also onions, cabbages, barley (good), with some very fine wheat almost ripe and quite beyond the reach of any frost likely to occur at that season. The success of these crops at an altitude of 1,800 feet above the sea, and, therefore, nearly on the general level of the plateau east of the Rocky Mountains, is a matter of some importance, though the proximity of the lake may have influenced the temperature.

"The gardens at Hudson's Hope, Fort St. John and Dunvegan are in the valley of Peace River, many hundred feet below that level, and they have also the advantage of a great deal of heat, reflected from the adjacent hills. In this connection it is right to mention that all the seed used by the people in the Peace River District had been grown year after year in the same ground, and generally without manure, and also that they have not the most improved and earliest varieties of either grain or vegetables.

"Eastward of Hudson's Hope it is said that snow seldom lies to a greater depth than two feet, and horses wintered in the open air; when it attains that thickness, however, they resort to the slopes of the valley facing the south, where the snow drifts off, leaving the grass bare.

"We had been in the valley of Peace River, from the mountains to Dunvegan, in the latter part of July, and the weather was then warm and mild. The month of August was spent between Dunvegan and Lesser Slave Lake, and 23 days of it on the plateau. During that time there was frost on the morning of the 6th, though the thermometer at 5 a. m. had risen to 46 degrees. Again on the 26th, when it was still 5 degrees below the freezing point at 5 a. m., and on the 27th, when it had risen 33 degrees at 4:30 a. m. On the other 20 days the lowest reading, between 4:30 and

5 a. m., was 39 degrees and the highest 65 degrees. The weather was clear and fine, and in the afternoon it was often warm enough to send the thermometer up to 80 degrees in the shade. From the time of leaving Dunvegan, September 5th, till we passed Moberly Lake on the 16th, we were on the level of the plateau, and might still be considered east of the mountains. There was frost on eight nights out of the twelve. While breakfasting at 5 a. m. on the 9th, the thermometer still stood at 20 degrees, and on three other mornings it had not risen above the freezing point at that hour. During that time the weather was generally clear and bright. We had fine but cold weather from the 17th till the summit of Pine River Pass was crossed, on the 28th, and from that time until we reached Quesnel, on October 17th, it was decidedly wintry, with hard frosts."

Speaking of the agricultural capabilities of the Peace River District, Mr. Cambie remarks as follows:—

"Without taking into consideration the ground gone over by the other members of our expedition when we separated, I can state that there is a tract of great fertility extending eastward from the foot-hills of the Rocky Mountains at Hudson's Hope to Lesser Slave Lake. Messrs. McLeod and Dawson have examined it south-westwards to the base of the Rocky Mountains, and will inform you of its precise extent in that direction. How far it reaches to the north is still undetermined, but I saw, and can speak from personal observation of the strip just referred to, 200 miles long by 50 wide, which, if the climate proves suitable, can hardly be surpassed as an agricultural district."

DR. DAWSON'S REPORT

Dr. G. M. Dawson, who was a member of the exploratory party of 1897, in company with Messrs. Cambie, McLeod and Gordon, in his report in 1880, says:—

"The portion of the Peace River country, for which the exploration of last season enables pretty accurate general information to be given, may be considered as extending eastward from the Middle Forks of Pine River. West

of this point, as already stated, the areas of fertile land are small, being confined to certain river valleys which penetrate the foot-hills of the Rocky Mountains and high plateau attached to them. With this western limit, the region to be now described may be considered as bounded to the north by the 57th parallel, to its intersection eastward with the Peace River. Thence the boundary may be assumed to follow the Peace River southward to the mouth of Heart Brook, near the confluence of the Smoky River. Thence to run south-eastward to the extremity of Lesser Slave Lake, to follow the western border of the hilly region lying to the south of the lake to the Athabasca River; thence to follow the Athabasca westward to the foot-hills, and, skirting the foot-hills, to run north-westward to the first-mentioned point on Pine River.

"West of the Smoky River, both to the south and north of Peace River, there are extensive areas of prairie country, either perfectly open and covered with a more or less luxuriant growth of grass, or dotted with patches of coppice and trees.

"The northern banks of the Peace River Valley are also very generally open and grassed, and parts of the valley of the Smoky and other rivers have a similar character. The total area of prairie land west of the Smoky River may be about 3,000 square miles. The remainder of the surface is generally occupied by second-growth forest, occasionally dense, but more often open and composed of aspen, birch and cottonwood, with a greater or less proportion of coniferous trees. Some patches of the original forest, however, remain, particularly in the river valleys, and are composed of much larger trees, chiefly coniferous, among which the black spruce is most abundant. Handsome groves of old and large cottonwoods are also to be found in some of the valleys. Where the soil becomes locally sandy and poor, and more particularly in some of the more elevated parts of the ridges before described, a thick growth of scrub pine and black spruce, in which the individual trees are small, is found; and in swampy regions the tamarac is not wanting, and grows generally intermixed with the black spruce.

"The luxuriance of the natural vegetation in these prairies is truly wonderful, and indicates not alone the fertility of the soil, but the occurrence of a sufficient rainfall. The service berry, or amelanchier, and the choke berry, are very abundant in some places, particularly on the so-called Grande Prairie, which constitutes the great berry-ground of the Indians.

"While regretting that the data at disposal for the determination of the agricultural value of the Peace River country are not more ample, we may, I believe, arrive with considerable certainty at the general fact that it is great. From such comparison as can be made, it would be premature to allow that the climate of the Peace River is inferior to that of the region about Edmonton or the Saskatchewan. It is true that in both the Saskatchewan and Peace River Districts the season is none too long for the cultivation of wheat, but if the crop can be counted on as a sure one—and experience seems to indicate that it may—the occurrence of early and late frosts may be regarded with comparative indifference. The season is at least equally short throughout the whole fertile belt from the Peace River to Manitoba, though early and late frosts are not so common in the low valley of the Red River. The almost simultaneous advance of spring along the whole line of this fertile belt is indicated by the dates of the flowering of the various plants, a point referred to by me in some detail elsewhere. It is further unquestionable that the winter is less severe and not subject to the same extremes in the Peace River and Upper Saskatchewan regions as in Manitoba."

PROFESSOR MACCUN'S REPORT

Professor John Macoun, in a report written specially for this Bulletin, says:—

"It is difficult to define the limits of that part of the Peace River District lying within British Columbia, as comparatively little has been done to fix these, owing to the absence of surveys. Generally stated, however, the eastern boundary of British Columbia follows the summit of the

Rocky Mountains to latitude 54 degrees. At this point it passes due north on the 120th meridian to the 60th parallel and thence westward to the Pacific. That part which lies east of the Rocky Mountains is what is usually known as the Peace River country, and includes a great agricultural region both north and south of the river. In making a sketch of this region, it is not desirable to limit its extent to that part immediately within British Columbia, as no definite points have been fixed. On this account I reproduce that part of Dr. G. M. Dawson's report of 1870 which deals with the extent and capabilities of the district in question (reproduced elsewhere):—

AN IMMENSE DISTRICT OF GREAT FERTILITY

"From 5,000 to 10,000 square miles of the above area is included in British Columbia, and both at Hudson Hope and St. John the climatic conditions are favourable where the land is suited for agriculture. The country between Dunvegan and St. John, south of the Peace River, is largely prairie and poplar copse, and everywhere the soil is good. North of St. John, on the plateau back from the river, common grasses attained a height of from four to six feet, and vetches were found eight feet late in July, 1875.

"Since then many reports of the fertility of the region have been written, but none have denied the earlier statements made by the writer and Dr. Dawson. On this account it is fair to assume that our opinions are established facts, and that the 31,550 square miles of area mentioned by Dr. Dawson are not too much, and that when proper surveys are made, 10,000 square miles of this will fall to the portion of British Columbia.

"Poplar and spruce for all purposes and of good size are to be found throughout the district, except where prairie predominates. Many fine prairies are to be seen in the drier part, but in all cases these prairies seem to have been caused by repeated fires. The 'Grand Prairie,' which is said to be of great extent, is eminently suited for agriculture, as it is meadow and copse, and in places covered with berry-bearing bushes, chiefly saskatoon berries (*Amelanchier alnifolia*). It is now well known that spring opens about the

same time between Winnipeg and Peace River, and if either is earlier it is the Peace River. Summer frosts are practically unknown, but local late spring and early fall frosts may be expected for years to come. These will soon pass away as cultivation increases, in the same way as they have done in Manitoba and the Territories. At present farming is being carried on at the head of Lesser Slave Lake and on the plateau near the mouth of Smoky River. From both places I have seen fine samples of wheat grown during the past season.

"After having seen the growth of vegetables and cereals at Dawson, in the Yukon District, and remembering what I have seen on Peace River, the Necho, Lake Babine and the reports from the Skeena and Stikine, I am led to believe that the day of a general awakening has come, and we can now say that Northern British Columbia will, in the future, support a very large population on its own productions. Throughout the whole region, including the Yukon District, fodder for horses and cattle in any quantity can be grown. At Dawson, clover and timothy were found last season to do remarkably well. Oats, barley and wheat were found in the same field. The two former were ripe on August 23rd, and the wheat so far matured that, after drying, the ears looked ripe. Last month I sent three ears of wheat grown at Dawson in latitude 64 degrees 15 minutes, to the Experimental Farm in this city, to have it tested. The report received the other day was '100 grains planted, 100 grains sprouted, and 100 grains were vigorous, and no weak plants were produced.' Such a report as the above shows that all lands suitable to grow wheat in the Peace River region, Northern British Columbia and the Yukon District, have climatic conditions suitable for the growth of all necessities in a civilized community.

"The whole district, as said above, is an almost level plateau, with a slight dip to the valleys of the Peace and Smoky Rivers. Owing to the depth of these valleys and the absence of rock, the conditions for drainage are perfect, and all boggy places and wet or damp tracts will be easily drained. As will be seen by consulting a map, the finest tract lies between the Smoky River and the Peace,

and here the earliest settlements will likely take place. The shelter afforded by these river valleys, with others that traverse the plateau, will be at once taken advantage of for the protection of stock and the nearness of water.

TIMBER AND COAL IN ABUNDANCE

"The timber trees of the district are few but valuable. Aspen, poplar and white spruce are the prevailing trees, though cottonwood and black spruce are abundant in the river valleys, especially on islands. On the islands the latter tree grows to a great size and height, and it was not uncommon to see trees five feet and more in diameter on islands above and below St. John.

"It is more than likely that large coal deposits exist under much, if not all, of the district. In the autumn of 1872 the writer found a small seam of coal in a river bank between Dunvegan and St. John, south of the Peace River. This coal burnt with a bright flame, and although in small quantity where procured, may eventually turn out to be a valuable deposit. When making the traverse from Fort Assiniboine to Lesser Slave Lake, in September, 1872, the writer came upon a river which empties, very likely, into Smoky River, which had great blocks of coal in its bed, and evidently belonged to a very large seam."

EAST OF THE ROCKY MOUNTAINS

The first agricultural bulletin published by the Department of Agriculture for the new Province of Alberta, a "Report on the Grain Crop of 1905," has this to say of that portion of the Peace River Valley lying east of the Rocky Mountains:—

"As yet but little is known of the agricultural possibilities of this district. A few facts are given below with respect to certain settlements which, although too vague to be included in the general statistics, and not entirely relative to crops, are yet of great interest in that they indicate some of the possibilities of this great tract of territory.

"Fort Vermillion (latitude N. 58 degrees 24 minutes; longitude W. 116 degrees) is about 350 miles north of Edmonton and 100 miles from the northern boundary of the

Province. The settlement in this district extends about 25 miles along the Peace River and is four or five miles in width. It has about 300 head of horses and 500 head of cattle, owned by 25 farmers and ranchers. In 1905 six or seven thousand bushels of wheat were grown, and about 3,000 bushels of barley. There are three small grist mills.

"Peace River Landing (near T. 83, R. 21 W., 5th meridian).—This district, which is about 15 miles long and little more than two miles in width, has about 150 head of horses and the same number of cattle. The reported crop for 1905 is about 3,000 bushels of wheat and 1,500 bushels of oats. There are two small grist mills.

"Spirit River.—This district is about 15 miles square and has from 250 to 275 head of cattle, and from 300 to 400 head of horses.

"Grand Prairie.—It is reported that in this settlement there are about 200 head of cattle and a large number of horses."

THE NORTH-WEST COAST

THE country lying along the coast and the numerous adjacent islands between Wakeman Sound and the Kitimat River were explored in 1895 by George D. Corrigan, P.L.S. His report deals in detail with the country examined, which includes the valley of Wakeman Sound, valley of Kingcome River, Ah-ta Valley, valley of Thompson Sound, Quascilla and Bay River valleys, Merewood Sound, Cape Caution, Branham Island, Shelter Bay, Bradley Lagoon, Banks Island, Goschen and Porcher Islands, Henry, Stephen, William and Arthur Islands, the valley of the Kitimat, Kildala Valley, Gardner Canal and Swindle Island. The country, with some exceptions, is not suitable for farming, but the mainland coast and nearly all the islands would support fishing communities, who would increase their tribute from the sea by keeping a few cattle, hogs and

sheep, and growing vegetables. On Wakeman Sound there is an area of about 15,000 acres of first-class land, and at the mouth of Kingcome River 10,000 acres or more, which will grow hops, oats, and roots. The land is easily tilled and there is plenty of good timber; in fact, every requisite for a prosperous settlement. In the Ah-ta Valley there are about 1,000 acres of good land, which is easily accessible from Kingcome Inlet. On many of the islands there are small patches of arable land and considerable tracts of coarse grass lands which would support flocks of sheep. There is on Banks Island an area of about two hundred square miles of land which could be utilized for light agriculture, while the large meadows would make rich farming land. This island would make a good location for a community whose members would combine mixed farming, sheep and cattle-raising and dairying, with fishing. The surrounding waters teem with fish, and there are several streams up which the salmon run during the season. On Porcher Island there is a tract of some 25 miles of fairly good land along the coast which is now being surveyed for the use of actual settlers. The valley of the Kitimat is by far the best country visited. The soil appears very productive, the ordinary garden vegetables, together with cultivated small fruits, giving good returns. The wild crab-apple bears plentifully, and there is an abundance of high-bush cranberries, saskatoon and other berries. The run of oolachans is said to be enormous at the mouth of the Kitimat River, the Indians coming from long distances to fish for them. The mouth of the river is very shallow and difficult to enter except at full tide. In the lower valley there are several tracts of fairly good land which could easily be brought under cultivation, but a drawback exists in the fact that much of it is subject to flooding during the early summer freshets.

THE KITIMAT VALLEY

The valley of the Kitimat River, which stretches from the head of Douglas Channel to Lakelse Lake, contains some large areas of agricultural and grazing lands, much of which is capable of producing good crops of the coarse

grains and vegetables. The extent of available land in the Kitimat Valley is estimated at about 60,000 acres, and farther north, in the Lakelse Lake basin and along the Lakelse River to the Skeena River, are other tracts of arable land, all of which will shortly be made available to the settler through the construction of the Pacific Northern and Omineca Railway, a portion of the Grand Trunk Pacific transcontinental system, which is to run from a point on Douglas Channel, near the mouth of the Kitimat River to Hazelton, the head of navigation on the Skeena River. The Pacific Northern and Omineca Railway Company is now constructing a wagon road from Kitimat Arm to the mouth of the Copper River, which will be ready for traffic in the spring of 1908. The benches of the Skeena River are mostly good farming land, and in the valleys of Copper River and Gold Creek large areas exist, which will undoubtedly attract a farming population when the railway gives access to the country and creates a market by stimulating mining, lumbering and other industries. The Kitimat Valley, and all the country adjacent, is well-wooded, and the climate is somewhat similar to that of the Maritime Provinces and New England States. Wild fruits grow in profusion, wild crab-apple, raspberry, strawberry, saskatoon and high-bush cranberries, and much of the soil is specially adaptable to the cultivation of small fruits.

KINGCOME INLET, ETC.

Mr. Wm. M. Halliday, who has explored Kingcome Inlet, Wakeman Sound, Ah-ta Valley and Thompson Sound, and is thoroughly familiar with the country, has been kind enough to furnish this Department with a report on the same, as follows:—

"Kingcome River falls into Kingcome Inlet, and has a basin of good land about fifteen or eighteen miles long, and from one and a half to two miles wide. It has been surveyed as far as the Lahaw River, a tributary which empties into the Kingcome, about fifteen miles from its mouth. The general trend of the valley is north and south. At the mouth there are located eight or nine settlers who have pre-empted about 1,500 acres of flat, open grass land, which, however,

floods at extreme high tides. The soil is all sediment land on a gravel subsoil, and varies from 3 to 14 feet in depth. Along both banks of the river there is a fringe of spruce timber, behind which the timber is mostly alder, cottonwood and hemlock, which would be easily cleared. The soil is very productive and easily worked. The mountains on both sides of the valley rise very abruptly to a height of from 3,000 to 6,000 feet. One of the settlers, Mr. A. McKay, has about ten acres in orchard and small fruits, which have already given him an excellent return. Root crops of all kinds do well. No quantity of grain has been grown, but what has been planted has yielded well and of a first-rate quality. The climate is mild and even, no depth of snow ever falling and never lying long on the ground. The chief physical drawback to the valley, one that is common to all mountain valleys, is the fact that the mountains make a shade from the sun. However, on fine days in summer there is an average of 12 hours of sunlight. One of the settlers, Mr. E. A. Halliday, has a fine dairy herd of grade Herefords, and finds a ready market for both butter and beef. There are about 300 Indians living on the reserve, who are quiet and orderly, and, as a rule, are ready to work when needed. At present there is only communication once a month with Alert Bay, which is on the route from Victoria and Vancouver to British Columbia northern ports. There are about a dozen children in the valley, most of whom are yet under school age. The writer lived there for several years and can recommend it to the attention of those desiring homes."

Wakeman Sound

"About ten miles from the head of Kingcome Inlet, the inlet forks, one branch going northerly to Wakeman River. This valley is very similar to the Kingcome Valley, except that it is not quite so large. There are between 200 and 300 acres of grass land at the mouth of the river. The timber is very similar to that found at Kingcome, consisting of a fringe of spruce along the river banks, with alder, cottonwood and hemlock between it and the mountains. The mountains are not so abrupt, nor so high as the mountains at Kingcome. There are probably 10,000 acres suitable for

agricultural purposes, none of which at present has been taken up."

Ah-ta Valley

"Close to the head of Kingcome Inlet is another valley, called the Ah-ta, which drains into Bond Sound, and which consists of about 1,200 acres, about 100 of which is open grass land, the rest being lightly timbered. There is a low ridge about 200 feet high between this and Kingcome Inlet."

Thompson Sound

"Opening up from Tribune Channel, south-easterly from Bond Sound, is the valley of the Thompson or Kukweiken River. Here there is probably 100 acres of grass land, with a valley above it of from one to two miles wide. The valley is lightly timbered, and the soil fertile and easily worked, and with good drainage. There are about 8,000 acres of good land available."

Port Simpson

On account of the keen interest felt in the construction of the Grand Trunk Pacific Railway, a great number of inquiries are being received as to the character of the land in and about Port Simpson, the area available for settlement, etc., etc. It may be stated briefly that there are no public lands suitable for agriculture in or near Port Simpson. It is situated on a rocky peninsula, the nearest agricultural lands being in the valley of the Skeena, the Kitimat Valley, and the Kispyox and Bulkley Valleys.

QUEEN CHARLOTTE ISLANDS

The Queen Charlotte Group lies about 150 miles north of Vancouver Island and consists of over 150 islands, of which the principal are Prevost, Moresby, Graham and North Islands. The southern members of the group are mountainous and generally covered with heavy timber, but the northern portion of Graham Island is flat and, in the interior, presents a prairie-like appearance. A recent estimate places the arable land on Graham Island at 400,000 acres, but it will require extensive drainage works before it can be brought under cultivation. Here and there are small

areas of good land fit for mixed farming and stock-raising, but the great bulk of the land is swampy and useless without drainage.

Rev. C. Harrison, who has been for years a missionary at Masset, Graham Island, in the Queen Charlotte Group, is quite enthusiastic over its possibilities. He says:—

"There is sufficient land between Virago Sound and Rose Spit, with very little draining, to locate 100 families. With careful cultivation, wheat, oats and barley of good quality can be grown. Hops grow well and are of great size. All kinds of vegetables can be grown, onions, celery, cauliflowers, lettuce, cabbages, carrots, parsnips, beets, mangolds, peas, beans, turnips and potatoes. Small fruits grow profusely on the islands, such as strawberries, black and red currants, gooseberries, raspberries, etc. Cattle, sheep, pigs and horses do well, on account of the mild climate. The Indians, from a small beginning made with cattle and horses, have now quite a numerous band of each. Year after year we have put up 150 tons of hay for our animals, in order to keep them in good condition all the year round. Should a small dam be built across the mouth of a place known as Dalkatla, there would be about 4,000 acres of good clear land that could easily accommodate 50 families, allowing them 80 acres each. It is on part of this land that we run the mower and make our hay, as during the summer months the tides do not touch it. This dam could be built at an outlay of \$1,000.00."

Bordering the coast and the numerous streams and lakes the islands are heavily timbered, cedar being the principal wood, and a large lumbering plant is now being installed at Masset. The islands contain deposits of bituminous and anthracite coal, which are being developed, and there are strong indications of petroleum on the north-west coast of Graham Island. Copper, gold, silver and other minerals have also been found at various points. Queen Charlotte Islands should become in time the field of a vast fishing industry, as the adjacent waters teem with most valuable varieties of fish. Halibut, salmon, rock-cod, herring, flat-fish, dog-fish and whales are in great abundance,

and should become a valuable industrial asset as the population of the Province increases. The climate is mild, with a considerable rainfall.

WEST COAST OF THE MAINLAND

THIS includes the various settlements at Howe Sound, Squamish, Froek, Bute Inlet, Bella Coola, etc. Communication with these settlements is maintained altogether by steamers, there being no roads, and the character of the country being of such a nature that their construction is all but impossible, and must of necessity remain in abeyance until the population is sufficient to justify it. The country is, without exception, thickly wooded, principally with Douglas fir, spruce, hemlock, red cedar, balsam, fir, maple, alder, birch and other woods, and a great variety of underbrush. The coast line is indented along its whole length with deep fiords, which run many miles into the interior, and at the heads of which are large streams. The shores of these fiords are, except where rivers debouch, almost invariably precipitous. At the mouth of the streams and along their valleys are generally flats, fit for agricultural purposes after they are cleared of timber. As may be imagined from the description given, the precipitation is excessive, consisting almost entirely of rain, the snowfall, owing to the influence of the sea, being comparatively small, and the temperature, from the same cause, never very low. The markets of this part consist mostly of loggers' camps and Indians.

Fishing is carried on at various points along this coast, and logging for the mills at Burrard Inlet, Chemainus, etc. The Island of Vancouver, which lies parallel with this coast for a distance of some 300 miles, protects it for that distance from the force of the Pacific Ocean, and the waters of the straits are, therefore, comparatively calm. The whole of the region is naturally very sparsely populated, farmers or ranchers being in the minority; in fact, most of the inhabitants are engaged in other pursuits, fishing, lumbering, etc., and even those who are engaged in agriculture for part of

the year take advantage of the fishing season to supplement their incomes. Railroads now projected, and which it is believed will in the course of a few years be constructed, will have the effect of very materially altering the state of affairs all along this coast.—Report of the Department of Agriculture.

In addition to the islands already referred to in preceding pages there are a number of others which will in all probability become available for the raising of sheep and Angora goats. Some of these will be referred to subsequently. As already stated, at the heads of inlets there are usually small tracts of agricultural land, but these lie outside of the regular lines of communication, and require a very considerable development of coast industry to be made available. In Howe Sound and Squamish Valley, near Vancouver City, there is considerable good land, but heavily timbered. The settlements started there a few years ago, for that reason, have not made much headway.

BELLA COOLA

Mr. B. Brynildsen, of Bella Coola, reports:—

"Bella Coola is situated at the head of North Bentinck Arm, about 425 miles north from Victoria; communication by C. P. R. Co.'s steamers calling fortnightly during summer and monthly in winter." (A settlement of Norwegians was made here during 1894 and 1895). "The Bella Coola Valley begins at the head of the Inlet above-mentioned, about 65 miles from the coast line and running eastward about 45 miles, with a gradual rise from the sea to an altitude of about 800 feet at the head of the valley. The climate is all that can be wished for, as it is much drier than on the coast, being hotter in summer and a great deal colder in winter. The settlers have made large improvements on their lands. The various roots, vegetables and also Indian corn have been successfully raised, and of best quality. Wheat, oats and barley are also doing splendidly. Fruit is raised abundantly, and of best quality. No disease of any kind is experienced among the fruits or vegetables."

Much of the timber in the Bella Coola Valley is suitable for paper pulp, and it is announced in the press that a com-

pany is about to build a large pulp-making plant during the coming summer.

From information received from cruisers, there is understood to be considerable good land, timbered mainly with cedar, bordered by rich tide flats, along the south side of Burke Channel. It is at present under reserve. There is also land of very much the same character on King Island, on the opposite side of the channel in question.

METEOROLOGICAL

	Annual Rain Fall Inches	Annual Snow Fall Inches	Highest Tempera- ture Deg. Far.	Lowest Tempera- ture Deg. Far.	Average Tempera- ture
Lillooet.....	5 to 8	35 to 60	85 to 95	-10 to -20	....
Barkerville.....	20	120	82	-28	34.2
Stuart Lake.....	8.15	74	88	-39	33.2
Bella Coola.....	36.20	46	91.5	0	44.9
Naas Harbour.....	58.16	17.9	....	....	....
Port Essington.....	121.10	68.5	....	....	....
Rivers Inlet.....	105.66	42.8	84.1	16.1	46
Masset.....	30.4	59.4	78	20	46.2
Port Simpson.....	71.26	34	74	15.6	46
Buckley Valley.....	....	16	90	-38	55

Mr. A. C. Murray, Hudson's Bay Company's agent in charge of Fort St. James, furnishes the following phenological report for 1905:—

- Feb. 27—Snowbirds arrived.
- Mch. 15—Rooks arrived.
- " 22—Geese reported.
- " 23—Mallard Ducks seen.
- " 25—Geese seen.
- " 26—American Robin seen.
- " 31—Bluebirds seen.

April 22—Canoes left for Quesnel (275 miles, 5 days down stream). Found Stuart, Nechaco and Fraser Rivers free of ice; may have been open for a week or so.

- April 26—Golden Woodpecker seen.
- May 1—Stuart Lake clear of ice.
- " 2—Swallows seen.
- " 8—Plowing commenced; seeding barley, oats and vegetables followed right along.

May 22—Blue Violet and Dandelion blossoming.
 June 2—Wild Rose and Columbine blossoming.
 " 4—Blue and White Clover blossoming.
 " 11—Highest water in Stuart Lake.
 " 14—Wild Strawberries ripening.
 July 16—Hay-cutting commenced.
 " 28—New Potatoes for dinner
 Aug. 19—Commenced taking up potatoes.
 Nov. 28—Stuart Lake frozen over opposite Fort St. James.
 Dec. 31—The deep part of Stuart Lake still unfrozen;
 this is exceptional.

ALTITUDES

Altitudes given by various authorities are as follows:—

Riskie Creek, Chilcotin.....	2,170 feet
Chilcotin Valley (average)	2,625 "
Barkerville.....	4,180 "
Stuart Lake	1,800 "
Ashcroft	1,508 "
Blackwater (Upper Canyon).	2,200 "
Chilako Valley.....	2,025 "
Nechaco Flats.....	2,600 "
Ft. St. James	2,232 "
Fraser Lake (Ft. Fraser)	2,650 "
Fort George	1,880 "
Cheslatta Lake	2,900 "
Ootsa Lake.....	3,200 "
Francais Lake.....	2,375 "
Lake of the Lake	1,912 "
Mouth of Morice River	2,500 "
Pleasant Valley (Bulkley).....	2,200 "
Le Croix Ranch.....	2,300 "
Alldredge.....	1,722 "

SYNOPSIS OF LAND LAW

PRE-EMPTIONS

CROWN LANDS, where such a system is practicable, are laid off and surveyed into quadrilateral townships, containing thirty-six sections of one mile square in each.

Any person, being the head of a family, a widow, or single man over the age of eighteen years, and being a British subject, or any alien, upon his making a declaration of his intention to become a British subject, may, for agricultural purposes, record any tract of unoccupied and unreserved Crown lands (not being an Indian settlement) not exceeding one hundred and sixty acres in extent.

No person can hold more than one pre-emption claim at a time. Prior record of pre-emption of one claim and all rights under it are forfeited by subsequent record of pre-emption of another claim.

Pre-emptions cannot be staked by an agent.

Land recorded or pre-empted cannot be transferred or conveyed until after a Crown grant has been issued.

Such land, until the Crown grant is issued, is held by occupation. Such occupation must be a bona fide personal residence of the settler or his family.

The settler must enter into occupation of the land within sixty days after recording, and must continue to occupy it.

Continuous absence for a period longer than two months consecutively of the settler or family is deemed cessation of occupation; but leave of absence may be granted not exceeding six months in any one year, inclusive of two months' absence.

Land may be considered abandoned if unoccupied for more than two months consecutively.

If so abandoned, the land becomes waste lands of the Crown.

The fee on recording is two dollars (8s.)

The settler shall have the land surveyed at his own instance (subject to the ratification of the boundaries) within five years from the date of record.

After survey has been made, upon proof in declaration in writing of himself and two other persons of occupation for two years from date of pre-emption, and of having made permanent improvements on the land to the value of two dollars and fifty cents per acre, the settler, on producing the

pre-emption certificate, obtains a certificate of improvement upon payment of a fee of \$2.

After obtaining the certificate of improvement and paying for the land, the settler is entitled to a Crown grant in fee simple. He pays \$10 therefor.

The price of Crown lands pre-empted is \$1 (4s.) per acre, which must be paid in four equal instalments, as follows:—First instalment two years from date of record or pre-emption, and yearly thereafter, but the last instalment is not payable till after the survey, if the land is unsurveyed.

Two, three or four settlers may enter into partnership with pre-emptions of 160 acres each, and reside on one homestead. Improvements amounting to \$2.50 per acre made on some portion thereof will secure Crown grant for the whole, conditions of payment being same as above.

Coal and petroleum lands do not pass under grant of lands acquired since passage of Land Act Amendment of 1899.

No Crown grant can be issued to an alien who may have recorded or pre-empted by virtue of his declaring his intention to become a British subject, unless he has become naturalized.

The heirs or devisees of the settler are entitled to the Crown grant on his decease.

PURCHASES

Crown lands may be purchased to the extent of 640 acres, and for this purpose are classified as first and second class, according to the report of the surveyor. The minimum area that may be purchased shall be forty acres, measuring 20 chains by 20 chains, except in cases where such area cannot be obtained.

Purchased lands may be staked by an agent.

Lands which are suitable for agricultural purposes, or which are capable of being brought under cultivation profitably, or which are wild hay meadow lands, rank as and are considered to be first-class lands. All other lands, other than timber lands, shall rank and be classified as second-class lands. Timber lands (that is, lands which contain milling

timber to the average extent of eight thousand feet per acre west of the Cascades, and five thousand feet per acre east of the Cascades, to each one hundred and sixty acres) are not open for sale.

The minimum price of first-class lands shall be \$5 per acre, and that of second-class lands \$2.50 per acre: Provided, however, that the Chief Commissioner may for any reason increase the price of any land above the said prices.

No improvements are required on such lands unless a second purchase is contemplated. In such case the first purchase must be improved to the extent of \$3 per acre.

When the application to purchase is filed the applicant shall deposit with the Commissioner a sum equal to fifty cents per acre on the acreage applied for. When the land is finally allotted the purchaser shall pay the balance of the purchase price.

LEASES

Leases of Crown lands which have been subdivided by survey in lots not exceeding twenty acres may be obtained; and if requisite improvements are made and conditions of the lease fulfilled at the expiration of lease, Crown grants are issued.

Leases (containing such covenants and conditions as may be thought advisable) of Crown lands may be granted by the Lieutenant-Governor in Council for the following purposes:—

- (a) For the purpose of cutting hay thereon, for a term not exceeding 10 years.
- (b) For any purpose whatsoever, except cutting hay as aforesaid, for a term not exceeding twenty-one years.

Leases shall not include a greater area than one thousand acres.

Leased lands may be staked by an agent.

EXEMPTIONS

The farm and buildings, when registered, cannot be taken for debt incurred after registration; and it is free from seizure up to a value not greater than \$500 (£100 English). Cattle "farmed on shares" are also protected by an Exemp-

tion Act. Pre-emptions are exempt from taxation for two years from date of record, and there is an exemption of \$500 for four years after record.

HOMESTEADS

The Government of British Columbia does not grant free homesteads.

The fact of a person having a homestead in another Province, or on Dominion Government lands in this Province, is no bar to pre-empting Crown lands in British Columbia.

HOW TO SECURE A PRE-EMPTION

Any person desiring to pre-empt unsurveyed Crown lands must observe the following rules:—

1. Place a post four or more inches square and four or more feet high above the ground—a tree stump squared and of proper height will do—at one angle or corner of the claim and mark upon it his name and the corner or angle represented, thus:—

“A.B.’s land, N.E. corner post” (meaning north-east corner, or as the case may be), and shall post a written or printed notice on the post in the following form:—

“I, A.B., intend to apply for a pre-emption record of acres of land, bounded as follows: Commencing at this post; thence north chains; thence east chains; thence south chains; thence west chains (or as the case may be).

“Name (in full),
Date.”

2. After staking the land, the applicant must make an application in writing to the Land Commissioner of the district in which the land lies, giving a full description of the land, and a sketch plan of it; this description and plan to be in duplicate. The fee for recording is \$2.

3. He shall also make a declaration, in duplicate, before a Justice of the Peace, Notary Public, or Commissioner, in Form 2 of the Land Act, and deposit same with his application. In the declaration he must declare that the land

staked by him is unoccupied and unreserved Crown land, and not in an Indian settlement; that the application is made on his own behalf and for his own use for settlement and occupation, for agricultural purposes, and that he is duly qualified to take up and record land.

4. If the land is surveyed the pre-emptor must make application to the Commissioner exactly as in the case of unsurveyed lands, but it will not be necessary to plant posts.

5. Every pre-emption shall be of a rectangular or square shape, and 160 acres shall measure either 40 chains by 40 chains—880 yards by 880 yards, or 20 chains by 80 chains—440 yards by 1,760 yards; 80 acres shall measure 20 chains by 40 chains; and 40 acres, 20 chains by 20 chains. All lines shall be run true north and south and true east and west.

6. When a pre-emption is bounded by a lake or river, or by another pre-emption or by surveyed land, such boundary may be adopted and used in describing the boundaries of the land.

7. Sixty days after recording the pre-emptor must enter into occupation of the land and proceed with improving same. Occupation means continuous bona fide personal residence of the pre-emptor or his family, but he and his family may be absent for any one period not exceeding two months in any year. If the pre-emptor can show good reason for being absent from his claim for more than two months, the Land Commissioner may grant him six months' leave. Absence without leave for more than two months will be looked upon as an abandonment of all rights and the record may be cancelled.

8. No person can take up or hold more than one pre-emption.

9. The pre-emptor must have his claim surveyed, at his own expense, within five years from the date of record.

10. The price of pre-empted land is \$1 per acre, to be paid for in four equal annual instalments of 25 cents per acre, the first instalment to be paid two years after record.

11. After full payment has been made the pre-emptor shall be entitled to a Crown grant of the land, on payment of a fee of \$10.

12. A pre-emption cannot be sold or transferred until after it is Crown-granted.

13. A pre-emption cannot be staked or recorded by an agent.

TAXATION

Outside of incorporated cities, towns and municipalities, the taxation is imposed and collected directly by the Provincial Government and expended in public improvements, roads, trails, wharves, bridges, etc., in assisting and maintaining the schools, in the administration of justice.

The rates of taxation imposed by the latest Assessment Act are as follow:

On Real Property	3·5 of one per cent. of assessed value
" Personal Property.....	3·5 of one per cent. of assessed value
" Wild Land	4 per cent.
" Coal Land, Class A.....	1 per cent.
" Coal Land, Class B.....	2 per cent.
" Timber Land.....	2 per cent.
" income of \$2,000 or under.....	1½ per cent.
" income over \$2,000 and not exceeding \$3,000.....	1¾ per cent.
" income over \$3,000 and not exceeding \$4,000.....	2 per cent.
" income over \$4,000 and not exceeding \$7,000.....	3 per cent.
" income over \$7,000.....	4 per cent.

Discount of 10 per cent. allowed if paid before June 30, and the following exemptions from taxation are granted:—

On personal property up to \$500 (to farmers only.) Farm and orchard products, and income from farm.

On income up to \$1,000.

On pre-empted land for two years from date of record and an exemption of \$500 for four years after record.

In addition to above taxes, royalty is reserved on coal, timber and minerals.

SETTLERS' EFFECTS FREE

Settlers' effects, viz.:—Wearing apparel, books, usual and reasonable household furniture and other household effects; instruments and tools of trade, occupation or employment; guns, musical instruments, domestic sewing machines, typewriters, bicycles, carts, waggons, and other highway vehicles; agricultural implements, and live stock for the farm, not to include live stock or articles for sale, or for

use as a contractor's outfit, nor vehicles nor implements moved by a mechanical power, nor machinery for use in any manufacturing establishment; all the foregoing, if actually owned abroad by the settler for at least six months before his removal to Canada, and subject to regulations by the Minister of Customs: Provided that any dutiable articles entered as settlers' effects may not be so entered unless brought by the settler on his first arrival, and shall not be sold or otherwise disposed of without payment of duty until after twelve months' actual use in Canada.

A settler may bring into Canada free of duty live stock for the farm on the following basis, if he has actually owned such live stock abroad for at least six months before his removal to Canada and has brought them into Canada within one year after his first arrival, viz.:—If horses only are brought in, 16 allowed; if cattle only are brought in, 16 allowed; if sheep only are brought in, 60 allowed; if swine only are brought in, 60 allowed. If horses, cattle, sheep and swine are brought in together, or part of each, the same proportions as above are to be observed. Duty is to be paid on the live stock in excess of the number above provided for. For customs entry purposes, a mare with a colt under six months old is to be reckoned as one animal; a cow with a calf under six months old is also to be reckoned as one animal.

GOVERNMENT LAND AGENTS

The following is a list of Government Agents with whom pre-emptions may be filed. Lands in outlying districts, in which there is no resident agent, are dealt with in the Lands and Works Department, Victoria, R. A. Renwick, Esq., Assistant Commissioner.

DISTRICT	GOVERNMENT AGENT	ADDRESS
CARIBOO—Barkerville	J. G. Walker.....	Barkerville
CASSIA—Telegraph Creek	James Porter.....	T. L. & J. Creek
Atlin	J. A. Fraser.....	Atlin
COAST—Port Simpson	W. Manson.....	Prince Rupert
LILLOOET—Clinton	Frederick Soues	Clinton
YALE—Ashcroft	H. P. Christie	Ashcroft
KAMLOOPS—Kamloops	G. C. Tunstall	Kamloops
OMINECA—Hazelton	F. W. Valleau	Hazelton
REVELSTOKE—Revelstoke	Robert Gordon	Revelstoke

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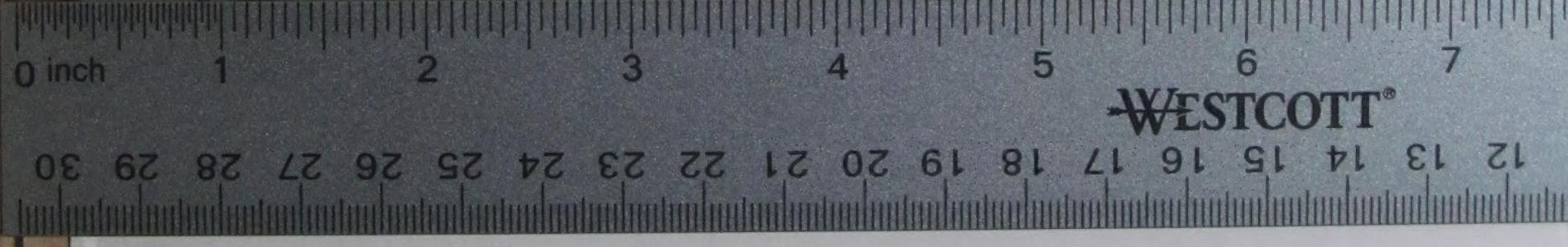
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